CALIFORNIA COASTAL COMMISSION
CENTRAL COAST DISTRICT OFFICE
725 FRONT STREET, SUITE 300
SANTA CRUZ, CA 95060
(831) 427-4863

W12b

Filed:	03/04/02
49th day:	04/22/02
49 day waiver:	03/12/02
Staff:	M. Watson
Staff report:	07/17/03
Hearing date:	08/06/03

APPEAL STAFF REPORT
SUBSTANTIAL ISSUE DETERMINATION & DE NOVO HEARING

Appeal number..... **A-3-PSB-02-016, Grossman-Cavanagh**

Applicants..... Gary Grossman and Walter Cavanagh

Appellants..... Commissioners Sara Wan and Pedro Nava

Local government ..... City of Pismo Beach

Local decision..... On December 11, 2001, the Planning Commission approved with conditions an application for a coastal development permit to construct a seawall and shoreline armoring along the bluffs at 121 and 125 Indio Drive. The Planning Commission's decision was appealed on December 26, 2001 and subsequently upheld by the City Council on February 5, 2002.

Project location..... 121 & 125 Indio Drive, Sunset Palisades Planning Area, Pismo Beach, San Luis Obispo County (APN: 010-205-002 and 010-205-001). See Exhibit 1.

Project description..... As approved by the City of Pismo Beach, the project involves construction of a concrete seawall 165 feet in length and approximately 5' to 10' in width and 9' to 11' in height. There is an additional 4 feet of gunite facing proposed on the bluffs above the wave deflector and cut-off walls to prevent flanking. The project has subsequently been modified to include a recurved, contoured and bluff-colored, vertical seawall 165' in length, 18 inches in width, and approximately 15' – 20' in height. The revised project also includes removal and replacement of a City-owned storm water outfall, seacave fill, repair and resurfacing of an existing shotcrete wall, and cut-off walls to prevent flanking.

File documents..... City of Pismo Beach Permit Numbers 95-141, 96-151, 97-030, and 00-0198 and assorted geologic reports; City of Pismo Beach certified Local Coastal Program.

Staff recommendation .. **Substantial Issue Exists; Approve w/ Conditions**

Summary of staff recommendation: On December 11, 2001, the City of Pismo Beach approved a Coastal Development Permit authorizing Shell Beach blufftop property owners, Walter Cavanagh and Gary Grossman, to construct a concrete seawall over 165' in length and 9' - 11' in height. The project also included a series of concrete benches over siltstone protrusions 5' – 10' in width, a cut off wall at the outer edge of the siltstone projection, and a gunite wall constructed on the bluff face to a height of 4 feet above the wave deflector. The locally approved project was intended to protect a pre-Coastal Act residence at 121 Indio Drive and a second residence constructed in 1998 (125 Indio Drive) from erosion. The coastal development permit for the residence at 125 Indio, issued in May 1997 by the City of Pismo Beach, was premised on an adequate setback to allow ongoing erosion of the bluff for a period of 100 years without threatening the structural integrity of the house and without the need for a future shoreline protection device within this time period.

On February 5, 2002, the City Council denied an appeal of the seawall project finding it consistent with the certified LCP standards for "bluff stabilization." On March 4, 2002, two Commissioner's appealed the City approval on the basis that the project did not conform to the City's Shoreline Protection Criteria and Standards, and other LCP policies regarding shoreline armoring, public access and visual impacts, and addressing coastal hazards. Prior to action on this item in April 2002, the Applicants requested that the Substantial Issue hearing be postponed, and on March 19, 2003, submitted additional geologic information and a revised project. As currently proposed, the project involves a recurved, contoured, bluff-colored and sculptured vertical wall 165' in length, 18 inches in width, and approximately 15' – 20' in height. The revised project also includes removal and replacement of a City-owned storm water outfall, a seacave fill, repair and resurfacing of an existing shotcrete wall, and cut-off walls to prevent flanking of the seawall.

The project approved by the City raises a substantial issue regarding conformance to the City of Pismo Beach certified Local Coastal Program (LCP) shoreline hazard, long-term stability, and public viewshed policies, as well as with the public access policies of the Coastal Act. For example, the City's approval did not adequately evaluate the existing threat to the structures, or the project's impacts on public access and sand supplies. Moreover, the City did not adequately address less environmentally damaging alternatives. The alternative approved by the City is inconsistent with LCP requirements due to its excessive footprint, visual impact, and lack of mitigation for the significant adverse impacts to public access and recreational opportunities. The approved seawall would occupy nearly 1,000 square feet of sandy beach area that has been offered for dedication as a lateral access and passive recreation use.

As a result, staff recommends that the Commission find that the appeal raises a **substantial issue.**

The revised project and supplemental information have, to a limited degree, resolved some of these issues. With regard to the need for shoreline protection, geologic information provided by the Applicant's consultants indicates that the structures are threatened. Particularly, a vertical bluff face comprised mainly of poorly consolidated marine terrace deposits, in combination with high ground water level and active erosion from wave attack, may cause a collapse of the bluff at this location. The site has a low factor of

safety against landsliding. A major earthquake during wet winter conditions and high ground water is especially likely to result in collapse of the bluff that would damage the existing structures. Regarding alternatives, the Applicants are now proposing a vertical wall solution that would occupy a smaller footprint than rip-rap or the concrete structure approved by the City. The proposed seawall will be colored and contoured/sculptured to mimic the natural undulating bluff face and require a minimal amount of landform alteration. Finally, in order to avoid and mitigate impacts to coastal resources and public access and recreation, the Applicants propose to remove the storm water outfall pipe and concrete pedestal at the end of Florin Street, provide beach nourishment or equivalent in-lieu fee for sand supply loss, remove concrete blocks in the immediate surf zone (separate CDP action), and restore and re-vegetate the upper bluff with drought-tolerant, native plantings.

Notwithstanding the improved design, additional measures are needed to ensure that the project is carried out consistent with the LCP coastal resource protection and shoreline hazard provisions, as well as Coastal Act access and recreation policies. Staff therefore recommends that the Commission **approve a revised project with conditions** requiring the Applicants to provide Final Seawall Plans, Construction BMPs, Drainage and Landscaping Plans, Beach Area Restoration, Seawall Maintenance & Monitoring, Storm Drain Maintenance, As-Built Plans and future Shoreline Development Stipulations. These conditions maximize the project's conformance to the coastal access and resource protection requirements of the LCP and Coastal Act by requiring:

- The seawall to be located as close to the existing toe of the bluff as possible;

- The applicants to maintain, monitor, and report on the efficacy of the seawall and the storm drain system;

- The Applicants to assume the risk of known hazards associated with the proposed development along the shoreline, and waives the liability for any such claims of injury or damage against the Commission;

- Additional mitigation for impacts to Sand Supply and Public Access;

- The Applicants to record a deed restriction acknowledging that the Commission authorized development on the subject properties subject to the terms and conditions of the permit. The deed restriction binds the Applicants and all successors of the property to the terms and conditions of this permit.

Staff Report Contents

Exhibit 1: Project Location Map
Exhibit 2: City of Pismo Beach Staff Report, Findings and Conditions
Exhibit 3: Appeal of Commissioners Sara Wan and Pedro Nava
Exhibit 4: Current Project Plans
Exhibit 5: Existing Offer to Dedicate 125 Indio
Exhibit 6: Easement to SLO County
Exhibit 7: Area for Lateral Access Dedication
Exhibit 8: Photo of Project Site

1. Local Government Action

On December 11, 2001, the City of Pismo Beach Planning Commission approved and issued a coastal development permit for a shoreline armoring project at 121 / 125 Indio Drive in the Sunset Palisades planning area of the City. In making its findings, the City relied upon geologic report findings, which showed that the rate of erosion had accelerated to upwards of 2 feet per year. The consulting geologist concluded that at the current rate of erosion the residence (125 Indio Dr.) would be lost within 10 years.

An appeal of the Planning Commission decision was filed on December 26, 2001 by a local resident, Bruce McFarlan, who argued that the project was inconsistent with the City's certified LCP policies regarding impacts to sand supply, visual compatibility, public access, and use of accurate geology reports. The appellant's contentions were summarily denied by the City Council on February 5, 2002, upholding the earlier Planning Commission decision.

2. Standard of Review for Appeals

Coastal Act section 30603 provides for the appeal of approved coastal development permits in jurisdictions with certified local coastal programs for development that is (1) between the sea and the first public road paralleling the sea or within 300 feet of the inland extent of any beach or of the mean high tide line of the sea where there is no beach, whichever is the greater distance; (2) on tidelands, submerged lands, public trust lands, within 100 feet of any wetland, estuary, or stream, or within 300 feet of the top of the seaward face of any coastal bluff; (3) in a sensitive coastal resource area; (4) for counties, not designated as the principal permitted use under the zoning ordinance or zoning district map; and (5) any action on a major public works project or energy facility. This project is appealable because the area of development is between the sea and the first public road paralleling the sea.

The grounds for appeal under section 30603 are limited to allegations that the development does not conform to the standards set forth in the certified local coastal program or the public access policies of the Coastal Act. Section 30625(b) of the Coastal Act requires the Commission to conduct a de novo coastal development permit hearing on an appealed project unless a majority of the Commission finds that "no substantial issue" is raised by such allegations. Under section 30604(b), if the Commission conducts a de novo hearing, the Commission must find that the proposed development is in conformity with the certified local coastal program. Section 30604(c) also requires an additional specific finding that the development

is in conformity with the public access and recreation policies of Chapter Three of the Coastal Act, if the project is located between the nearest public road and the sea or the shoreline of any body of water located within the coastal zone. This project is located between the nearest public road and the sea and thus, this additional finding must be made in a de novo review in this case.

The only persons qualified to testify before the Commission on the substantial issue question are the Applicants, persons who made their views known before the local government (or their representatives), and the local government. Testimony from other persons regarding substantial issue must be submitted in writing. Any person may testify during the de novo stage of an appeal.

3. Summary of Appellant's Contentions

In general, the Appellants assert that it has not been clearly demonstrated that the proposed seawall is necessary to protect the existing residence. Specifically, Appellant's Wan and Nava contend that the City-approved project is not consistent with the certified Land Use Plan (LUP) Policies S-3 (Bluff Set Backs), S-6 (Shoreline Protective Devices) and Implementation Plan (IP) Chapter 17.078 (Hazards and Protection Overlay Zone), particularly section 17.078.060(4) (Shoreline Protection Criteria and Standards) because:

- It has not been adequately demonstrated that the seawall is necessary to protect an existing endangered structure at this location. The LCP requires that an existing structure be in danger from erosion if a shoreline protection structure is to be considered.
- It has not been adequately demonstrated that the required "thorough analysis of all reasonable alternatives, including but not limited to, relocation, less obtrusive walls, and the "no project" alternative has been performed.
- The proposed seawall reduces recreational beach area contrary to the LCP requirement that the structure must not reduce or restrict public beach access.
- There is little discussion of the effect of the proposed project on shoreline processes and sand supply contrary to the LCP requirement that "the shoreline structure eliminate or mitigate impacts on local shoreline sand supply." There are likewise no mitigations for any such impacts due to the project.
- The seawall does not minimize visual intrusion as required by the LCP.

Please refer to Exhibit 3 for the full text of the appeal.

4. Staff Recommendation on Substantial Issue

The staff recommends that the Commission determine that a substantial issue exists with respect to the grounds on which the appeal was filed. A finding of substantial issue would bring the project under the

jurisdiction of the Commission for hearing and action.

Motion. I move that the Commission determine that Appeal Number A-3-PSB-02-016 raises no substantial issue with respect to the grounds on which the appeal has been filed under § 30603 of the Coastal Act.

Staff Recommendation of Substantial Issue. Staff recommends a **NO** vote. Failure of this motion will result in a de novo hearing on the application, and adoption of the following resolution and findings. Passage of this motion will result in a finding of No Substantial Issue and the local action will become final and effective. The motion passes only by an affirmative vote of the majority of the appointed Commissioners present.

Resolution To Find Substantial Issue. The Commission hereby finds that Appeal Number A-3-PSB-02-016 presents a substantial issue with respect to the grounds on which the appeal has been filed under § 30603 of the Coastal Act regarding consistency with the Certified Local Coastal Plan and/or the public access and recreation policies of the Coastal Act.

Recommended Findings and Declarations

5. Project Location, Description, and Background

The project approved by the City is located on the bluffs and beach seaward of 121 and 125 Indio Drive in the Sunset Palisades planning area of the City of Pismo Beach. Indio Drive is located in a residential neighborhood of large seaside homes grouped close together. Most residences have small yards and decks adjacent to the top of the bluff. The beach at this location is known locally as the "Palisades" and the reefs offshore are used by surfers. There is also tide-pooling in this area.

The blufftop lots at 125 and 121 Indio lie southeast to the Florin Street end cul-de-sac. The blufftop at this location is at an elevation of approximately 40 feet above mean sea level. The bluff is comprised of marine terrace deposits consisting of a conglomerate layer of gravels, sand, and silt 4 to 6 feet thick that lies on siltstone bedrock. Above the conglomerate layer, further marine terrace deposits consist of sand, silt, and clay. This poorly consolidated material is very susceptible to erosion by runoff, rain, and wave attack. The El Nino winter of 1997 – 1998 produced the wettest February since rainfall records began in 1967. Nearly 22" of rain fell on the central California coast from late January through February. The Applicants indicate that it was during this time a massive bluff failure along the southwest edge of 125 Indio occurred eliminating 5 feet of bluff and necessitating a seawall.

The northwest portion of the lot at 121 Indio and the entire width of the lot at 125 Indio is natural bluff without any shoreline armoring including the portion of the cul-de-sac at Florin Street. Approximately 40' of the bluff face in the central portion of 121 Indio is covered with a layer of gunite. The residences are currently setback from the bluff edge approximately 13' and 20' for 121 and 125 Indio, respectively. There is a "pocket" beach directly seaward of the residences and it extends northwest past the Florin

Street cul-de-sac to a rocky outcropping just beyond the residence at 201 Indio Drive. A significant portion of the back beach and bluff face seaward of 201 Indio has been armored with rip-rap that was obtained via CDP issued in 1987.

City records on the original construction of the home at 121 Indio are not clear, though it appears from early 1970's aerial photography that the residence was constructed before the Coastal Act became law. Lot size is 100' by 100' and bluffs rise up to approximately 40' above mean sea level (MSL). Also at a date unknown, a large portion, 40' linear feet, of the bluff was armored. The lower 16 feet is constructed of concrete bags connected by rebar and coated with shotcrete. The upper 16 feet is wire mesh coated with four inches of shotcrete. The City approved a second story addition in October of 1995, and conditioned this approval for revised plans, which identify among other things, a public access easement obtained by San Luis Obispo County from the bottom of the bluff to the mean high tide. As of the writing of this report, staff has been unable to determine the status of the easement (i.e., specific requirements, ownership, etc.). In 1996, maintenance of the gunite seawall included filling cracks and holes with concrete and re-coating the entire wall with approximately two inches of shotcrete. The lower 5 feet of the bluff is bedrock material that is subject to wave attack. Gunite facing covers the terrace materials all the way up to the top of the bluff. An analysis of the zoning code development standards for the addition acknowledged among other things, that the standard for rear yard setback was a minimum of 25 feet. The existing house is approximately 13 feet from the bluff edge.

The City approved and issued a coastal development permit for the existing 4,100 square foot residence at 125 Indio on May 13, 1997. The existing lot size was 92' deep by 80' in width. The residence was constructed in 1998 with a bluff edge setback of 25 feet and the requirement that a Grading, Drainage, and Erosion Control plan be submitted prior to issuance of the building permit. The original geologic assessment of bluff erosion and cliff retreat (Terratech Inc. January 9, 1997) for the site concluded that the long-term erosion rate was on the order of 3 inches per year. The study found that development of the site along with proper erosion control measures would likely lead to a reduction in the long-term rate to 2 inches per year. Relying on this information, the City approved the project with a minimum bluff setback of 25'. As a condition of approval and prior to issuance of the permit, the Applicant was required to dedicate a lateral public access across the western edge of the property in the area of the bluff to the State Department of Parks and Recreation. Specifically, the dedication runs from the mean high tide line to the top of the bluff. On December 8, 1997 an Offer to Dedicate Public Access Easement was recorded in the San Luis Obispo County Recorders office irrevocably offering to dedicate the easement to the people of the State of California in gross and perpetuity. The offer has not yet been accepted.

The project approved by the City involves constructing a concrete seawall with a wave deflector approximately 165 feet in length, 5 to 10 feet in width, and ranging in height from 9 feet to 11 feet on the beach and bluff seaward of Indio Drive. The project also includes covering the bluff above the wave deflector with an additional 4 feet of gunite, bringing the overall height of the shoreline armoring to between 13 feet and 15 feet. As previously noted, the project has since been revised by the Applicants. The project approved by the City, however, remains the focus of the Substantial Issue analysis.

6. LCP Background

The City's LCP is composed of two documents, the Land Use Plan and the Zoning Ordinance. The Land Use Plan was comprehensively revised in 1992, and Coastal Commission modifications were adopted in May 1993. In 1998, the City submitted to the Commission the first comprehensive Zoning Ordinance revision since certification in 1983. The Commission and the City were unable to reach a consensus on suggested modifications and thus, the 1983 Zoning Ordinance remains as the standard of review.

7. Substantial Issue Findings

7.1 LCP Policies

The Land Use Plan Safety Element Policy S-6 and Sections 17.078.050(3), 17.078.060(4), and 17.078.060(6) of the Zoning Ordinance each contain policies related to construction of shoreline armoring devices.

S-3 Bluff Set-Backs

All structures shall be set back a safe distance from the top of the bluff in order to retain the structures for a minimum of 100 years, and to neither create nor contribute significantly to erosion, geologic instability or destruction of the site or require construction of protective devices that would substantially alter natural landforms along the cliffs.

The City shall determine the required setback based on the following criteria:

a. For development on single family residential lots subdivided prior to January 23, 1981, the minimum bluff setback shall be 25 feet from the top of the bluff… A geologic investigation may be required at the discretion of the City Engineer, and a greater setback may be applied as the geologic study would warrant.

S-6 Shoreline Protective Devices

Shoreline protective devices, such as seawalls, revetments, groins, breakwaters, and riprap shall be permitted only when necessary to protect existing principal structures, coastal dependent uses, and public beaches in danger of erosion. If no feasible alternative is available, shoreline protection structures shall be designed and constructed in conformance with Section 30235 of the Coastal Act and all other policies and standards of the City's Local Coastal Program. Devices must be designed to eliminate or mitigate adverse impacts on local shoreline sand supply, and to maintain public access to and along the shoreline. Design and construction of protection devices shall minimize alteration of natural landforms, and shall be constructed to minimize visual impacts. The City shall develop detailed standards for the construction of new and repair of existing shoreline protective structure and devices. As funding is available, the City will inventory all existing shoreline protective structures within its boundaries.

17.078.050(3) Bluff Hazard, Erosion and Bluff Retreat Criteria and Standards

Geologic studies and reports shall consider, describe, and analyze the following:

b. Historic, current and foreseeable cliff erosion, including investigation of recorded land surveys and tax assessment records in addition to the use of historic maps and photographs where available and possible changes in shore configurations and sand transport.

17.078.060 Shoreline Protection Criteria and Standards

(4) *Seawalls shall not be permitted unless the City has determined that there are no other less environmentally damaging alternatives for protection of existing development or coastal dependent uses. If permitted, seawall design must a) respect natural landforms; b) provide for lateral beach access; and c) use visually compatible colors and materials and will eliminate or mitigate any adverse impacts on local shoreline sand supply.*

(6) *Shoreline structures…which serve to protect existing structures…and that may alter natural shoreline processes shall not be permitted unless the City has determined that when designed and sited, the project will: (a) Eliminate or mitigate impacts on local shoreline sand supply; (b) Provide lateral beach access; (c) Avoid significant rocky points and intertidal or subtidal areas; (d) Enhance public recreational opportunities.*

7.2 Shoreline Structures Analysis

7.2.1 Threat to Existing Structures

The LCP allows shoreline protection structures to be permitted only when necessary to protect existing principal structures in danger from erosion. At the time that the residence at 125 Indio was approved in 1997, the Applicant's consulting geologist determined the 25' bluff setback would be adequate to sustain 100 years of bluff erosion.

The original Geotechnical report prepared in 1997 for the approval of the residence at 125 Indio noted that ongoing erosion could be attributed to several factors including wave attack, surficial runoff, subsurface soil saturation, coastline configuration, beach profiles, etc. In the case of the coastal bluff at 125 Indio, the soil profile is made up of a shallow layer of siltstone bedrock and conglomerate materials, and a thick layer of marine terrace materials. The report noted that the primary contributor to the rate of erosion is wave attack cutting into the base of the bluff and removing support for the overlying terrace materials. Utilizing aerial photos from 1955 – 1996, site reconnaissance, and other geologic maps, the consulting geologists concluded that the historical rate of retreat for the site was 6" annually, but that recent improvements, including erosion control measures, had effectively reduced the rate of retreat to 3 inches per year. The report further concluded that construction of the proposed residential structure at 125 Indio [without a seawall] would actually reduce the rate of retreat at the site to 2 inches annually. Based on the estimates of bluff retreat, the City of Pismo Beach found that a bluff setback of 25' was adequate to ensure the structural integrity of the residence for a period of 100 years.

Prior to construction of the house, a subsequent geologic assessment prepared on January 23, 1998 by GeoSolutions at the request of the Applicant, concluded that a coastal protection structure was necessary

to mitigate ongoing bluff erosion. Borrowing largely from the earlier Terratech Geotechnical report, the Geosolutions report reached the same conclusions regarding the rate of retreat at the site (i.e., 6" historically, 3" currently, 2" annually with additional improvements) but interpreted the findings to support a recommendation for a seawall. There had been no observed or documented changes in the rate of retreat in the 6 months since the coastal development permit had been approved for the construction of a new residence at 125 Indio. Noting that the bluff was actively retreating and would continue to retreat, the report appears to make a finding that the normal shoreline processes, in and of themselves, constitute a threat without any specific evidence that bluff erosion was endangering a physical structure.

On November 6, 2000, a Bluff Protection Plan for 121 and 125 Indio Drive, prepared by Fred Schott & Associates, was submitted to the City of Pismo Beach. As is the custom, the City requested peer review of the prior reports from Earth Systems Pacific. The consulting geologist, Rick Gorman submitted his findings in a report dated January 15, 2001. Mr. Gorman found that given the estimated rate of retreat of 2" per year by GeoSolutions, the residence at 121 Indio may not reasonably be threatened for another 10 years. Furthermore, based on the erosion rate and the original 25-foot setback at 125 Indio, the established setback should be adequate to ensure 100 years of bluff retreat without bluff armoring.

In response, the Applicant obtained the services of Golden State Aerial Surveys Inc. to photogrammetrically plot the bluff edge and determine the bluff-top retreat at the subject site. Photos from 1955, 1974, 1991, and 2000 were plotted and made available for evaluation. Consulting Geologist, R.T. Wooley reviewed this information along with the prior geologic reports and submitted a letter to the Applicant's agent Fred Schott on March 11, 2001. Assessing the new information provided by Golden State Aerial Surveys, Mr. Wooley observed that the erosion rates on the properties have not been regular but rather have varied widely. He noted that the episodic nature of bluff retreat coinciding with large storms and high tides, calls into question the applicability of expressing bluff losses in specific amounts per year and determined that the current existing conditions would threaten the residence within 10 years, maybe less. Additionally, Mr. Wooley stated that bluff loss would prevent construction of a seawall within 5 years due to the inability to place construction equipment between the bluff slope and the residence. Finally, in light of the difficulty in predicting severe storms, Mr. Wooley recommended that bluff armoring be permitted and constructed as soon as permissible.

In its peer review of June 8, 2001, Earth Systems Engineering Geologist, Rick Gorman, indicated that the results of the photogrammetric survey suggest that the bluff had retreated at a rate of 24" per year at 125 Indio and 10" per year at 121 Indio between 1990 and 2000. Regarding the claim that the structures would be threatened in 10 years, Mr. Gorman responded that based on the existing proximity to the bluff edge, it is difficult to predict the urgency of a seawall for these residences. Mr. Gorman pointed out that during the 10-year time period the bluff appeared to be eroding at an accelerated rate relative to the 1955 – 1990 values, and certainly much faster than reported by the original Geotechnical reports, but still did not indicate that the structures were at risk. Mr. Gorman also pointed out that the Florin Street end could be used as a construction staging area to stockpile materials and access point for construction equipment onto the beach.

The last bit of information provided to the City prior to approval of the seawall application, was a July 31, 2001 report by R.T. Wooley. In that report, Mr. Wooley stated that bluff stability would be

compromised during a seismic event, particularly if the soils were saturated at the time through rainfall, improper drainage, or irrigation. In the opinion of Mr. Wooley, a significant shaking event brought on by an earthquake on the San Andreas Fault (40 miles to the east of the site) or the Hosgri Fault (six miles to the west), could result in the loss of portions of the bluff slope, though no quantitative evidence was provided to support this claim. Up until this time, the City had rejected the Applicant's claim that a seawall was necessary at the site. However, this report was enough to establish need and gain City approval of the seawall.

The Commission appealed the project based on its review of the geologic reports, bluff position on aerial photographs, and site reconnaissance. Staff Geologist Mark Johnsson, reviewed the photogrammetric data supplied by Golden State Aerials, and noted that the data presented on sheet G-1 of the large-scale plans submitted by the Applicant, indicate that a maximum average erosion rate for one particular cross-section over the period of 1990 – 2000 was used to obtain the 2 feet per year. At the point where these data were obtained, the nearest structure is set back approximately 20 feet. Given this setback and the documented bluff retreat rate between 1990 and 2000, it seems unlikely that the structure would be threatened in the near future.

The City relied upon inadequate information submitted by the Applicants, in approving the application to construct a large bluff-fronting seawall at this location. A significant question has been raised as to the project's consistency with the City's LCP policies for the provision of shoreline protective devices to protect existing principal structures in danger from erosion. **Thus, the appeal raises substantial issue.** The Applicants have since, however, provided additional information supporting the need for protective action, as detailed in the De Novo findings.

7.2.2 Alternatives to Shoreline Armoring

Where existing structures are at risk, the LCP requires a thorough analysis of all reasonable alternatives, including but not limited to, the no project solution, relocation or partial removal of the threatened structure, and less obtrusive walls. Both the Land Use Plan policy for the Sunset Palisades planning area and the City's implementation policies require that a "seawall not be permitted unless the City has determined that there are no other less environmentally damaging feasible alternatives for protection of existing development or coastal dependent uses."

The City's approval of the seawall was made without the benefit of an adequate alternatives analysis. The response prepared for the "no project" alternative suggested that the longevity of the structures without a bluff armoring device is uncertain particularly in the event of an earthquake, and ongoing bluff retreat. In light of the difficulty of prediction of storm severity (and consequent wave attack), slope protection was recommended to prevent bluff collapse. As we know from experience, large earthquakes in the area of the subject property are extremely rare and as has been shown above, the documented bluff retreat over the period 1990-2000 indicates that it is questionable whether the structure would be threatened by erosion within the next few years. Thus, this aspect of the Applicant's proposal is inconsistent with the City's LCP policies.

Terracing and retaining walls were deemed infeasible because as envisioned by the consultant, both

options would require encroaching onto the beach area. Likewise, rip-rap was dismissed because of the large footprint associated with the stacking the armoring stones.

Relocation of the existing structures was determined to be infeasible because of conflicts with other existing zoning ordinance requirements for front yard setbacks and off-street parking. "There is no reasonable area on the lot where the buildings can be relocated and still comply with setbacks and off-street parking requirements." The Applicants did not provide any information on the engineering feasibility or cost of relocating the structure.

A "Palisade" wall was evaluated and although considered feasible, this alternative was rejected because it was thought to be inferior to the recommended concrete seawall. The Palisade wall includes a series of reinforced concrete piers drilled through the terrace deposits and into the bedrock to provide additional stability to the bluff. This system would stabilize the terrace deposits while allowing continued erosion until the piers become exposed. When the base of the piers are exposed, the "Palisade" wall will cease to provide effective protection. If the houses would still require protection at this point, it would be necessary to face the bluff between the piers with concrete.

The engineering feasibility was only developed for the preferred alternative. Cost data were not provided in any instance and thus, the alternatives were not seriously considered. Furthermore, the Applicants did not consider a recurved, bluff-colored, textured and sculptured vertical seawall alternative. This alternative, as detailed in the De Novo findings below, is far superior to the City-approved project, in that it has a smaller footprint and thus, less public access and sand supply impacts. As designed to mimic the bluff face, it will be more aesthetically pleasing with less visual impacts than the City approved wave deflector design. The City-approved seawall also has a series of concrete benches that step down over the bedrock protrusions and will result in greater landform alteration. Thus, the City-approved project is not the least damaging feasible alternative as evidenced by the alternative vertical seawall described herein.

Therefore a substantial issue is raised regarding the consistency of the City's approval with LCP policies S-6 and 17.078.060. The Applicants have since supplemented the alternatives analysis to include a more complete evaluation of each alternative as detailed in the De Novo findings.

7.2.3 Visual Impact and Public Access

If a hard armoring structure is proven necessary and appropriately sited, LCP policy 17.078.060(4) only allows such protection if it minimizes visual intrusion, and when it does not reduce public beach access, or adversely affect shoreline processes and sand supply. In this case, visual intrusion is guaranteed, though the Applicants contend that because the wave deflector is semi-vertical and follows the existing bluff face, it is much less obtrusive than other forms of shoreline armoring such as rip-rap. The City's Land Use Plan calls for creating a public view park at the Florin Street cul-de-sac directly adjacent to the subject lots. Though the City mentions that its approval could be conditioned to include coloring of the seawall, no such mitigation was found in the City's approval or original project proposal. The City approved project would noticeably change the existing bluff configuration and adversely impact the scenic view along the

bluff in Sunset Palisades.

With respect to public access and recreation, the Applicants contend that the wave deflector has less impact on beach use than other types of shoreline armoring like rip-rap. However, the cutoff design with 3 large steps reaching out and over the natural bedrock formations on the beach will impact lateral access in an area that is used by surfers, beachcombers, and tide-poolers. The City's staff report states that the nearest public access point is nearly one-half mile in either direction. Coastal staff notes that the reefs southeast of the subject lots are well known in the surfing community as part of the larger "Palisades" surfing area. Thus, even though there are no "formal" access points to the beach and reefs below, there are several trails that lead to the shoreline below. Beach users negotiate the rocky intertidal area to access the surfing resources just offshore. The current design of the seawall introduces a man-made concrete hazard on the beach slope.

Furthermore, as a condition of the original building permit issued for the residence at 125 Indio Drive, the Applicant was directed to offer to dedicate a public lateral access from the mean high tide to the top of the bluff. The proposed concrete wave deflector approved by the City would occupy a large portion of the property that is to be used for lateral access and for passive recreational activities. Thus, the City's approval of the proposed concrete wave deflector seawall is not consistent with the certified LCP policies (17.078.060(4) & (6). **As a result, substantial issue is raised.**

7.2.4 Sand Supply Impacts

Finally, the City's LCP requires that the seawall be designed to eliminate or mitigate adverse impacts to local shoreline sand supply and be in conformance section 30235 of the Coastal Act. The Commission's experience statewide has been that shoreline protection structures have a significant and measurable effect on shoreline process and sand supply. The project approved by the City would cover the toe and front of a coastal bluff. Bluff materials that would have contributed to the sand supply regime would be retained by such a structure, and the back beach location would be fixed to the detriment of the recreational beach area at this location as the shoreline migrates inland. The local approval did not adequately evaluate this impact or opportunities for mitigation. Because of this, a substantial issue is raised.

7.3 Substantial Issue Conclusion

The City's approval was predicated on inadequate information, which failed to establish a threat to the existing structures or examine all feasible alternatives. As it has been shown, there is a less damaging feasible alternative. The City approved project will adversely impact public access and recreational opportunities and will result in a degradation of visual resources and substantial landform alteration.

Therefore, a substantial issue is raised regarding the consistency of the City's approval with LUP Policies S-6 and Zoning Ordinance Sections 17.078.050(3)(b) and 17.078.060(4).

8. Staff Recommendation on De Novo Permit

The staff recommends that the Commission, after public hearing **approve** the Cavanagh-Grossman coastal development permit with conditions.

MOTION: ***I move that the Commission approve Coastal Development Permit No. A-3-PSB-02-016 pursuant to the staff recommendation.***

STAFF RECOMMENDATION OF APPROVAL: Staff recommends a **YES** vote. Passage of this motion will result in approval of the permit as conditioned and adoption of the following resolution and findings. The motion passes only by affirmative vote of a majority of the Commissioners present.

RESOLUTION TO APPROVE THE PERMIT: The Commission hereby approves a coastal development permit for the proposed development and adopts the findings set forth below on grounds that the development as conditioned will be in conformity with the policies of the certified City of Pismo Beach Local Coastal Program. Approval of the permit complies with the California Environmental Quality Act because either 1) feasible mitigation measures and/or alternatives have been incorporated to substantially lessen any significant adverse effects of the development on the environment, or 2) there are no further feasible mitigation measures or alternatives that would substantially lessen any significant adverse impacts of the development on the environment.

9. Conditions of Approval

A. Standard Conditions

1. **Notice of Receipt and Acknowledgment.** The permit is not valid and development shall not commence until a copy of the permit, signed by the Permittee or authorized agent, acknowledging receipt of the permit and acceptance of the terms and conditions, is returned to the Commission office.
2. **Expiration.** If development has not commenced, the permit will expire two years from the date on which the Commission voted on the application. Development shall be pursued in a diligent manner and completed in a reasonable period of time. Application for extension of the permit must be made prior to the expiration date.
3. **Interpretation.** Any questions of intent or interpretation of any condition will be resolved by the Executive Director or the Commission.
4. **Assignment.** The permit may be assigned to any qualified person, provided assignee files with the Commission an affidavit accepting all terms and conditions of the permit.
5. **Terms and Conditions Run with the Land.** These terms and conditions shall be perpetual, and it is the intention of the Commission and the Permittee to bind all future owners and possessors of the subject property to the terms and conditions.

B. Special Conditions

1. **Final Seawall Plans. PRIOR TO ISSUANCE OF THE COASTAL DEVELOPMENT PERMIT,** the Permittee shall submit Final Engineered Seawall Plans to the Executive Director for review and approval. The Final Plans shall be in substantial conformance with the May 20, 2003 *Bluff Restoration and Shore Protection* plans prepared by Skelly Engineering, which shall be revised and supplemented to comply with the following requirements:

   (a) Seawall Footprint. The footprint of the seawall shall be constructed as close to the toe of the bluff as possible, and located landward of the existing 15-foot topographic contour, except where engineering evidence justifies the need to locate limited portions of the wall seaward of the 15 foot contour (e.g., where necessary to connect the wall across existing notches and caves in the bluff face). The toe of the seawall shall not exceed more than 18" in width at any point along the length of the seawall.

   (b) Seawall Surfacing. The seawall shall be faced with a sculpted concrete surface that mimics the natural bluffs in the immediate vicinity in color, texture, and undulation. Final plans shall include a materials palette and/or brochures and photo examples describing the seawall facing techniques that will be applied to achieve this objective, and shall include color elevation drawings that accurately depict the anticipated appearance of the seawall.

   (c) Storm Water Outfall. The alignment of the replacement storm water outfall at the end of the Florin Street cul-de-sac shall be in conformance with the revised project plans dated June 25, 2003 and attached as Exhibit 4. However, the final plans shall limit the amount and extent of replacement rock to the minimum amount necessary to provide effective energy dissipation and prevent flanking of the seawall. Final plans for the storm water outfall shall also provide for the installation of an engineered storm water filtration mechanism specifically designed to remove vehicular contaminants and other typical urban pollutants more effectively than a standard silt and grease trap. The system shall be designed to treat the amount of storm water runoff expected to enter the storm drain inlet during the 85th percentile, 1-hour storm event with a safety factor of 2 or greater. The Permittee is encouraged to pursue, in coordination with the City of Pismo Beach, a connection between the Florin Street cul-de-sac storm drain and the sanitary sewer to allow polluted runoff to be directed to the sanitary sewer for treatment, particularly during times of low-volume flows, street cleaning, or hazardous spills.

   (d) Drainage Features. Final plans shall detail the specific size, locations, and extent of drainage features that will be incorporated within both the concrete wall and replacement gunite wall to allow for the discharge of subsurface water flows and ensure the structural stability of the approved shoreline protection measures.

   All final plans shall be submitted with documentation from a licensed geotechnical engineer that the plans are consistent with the recommendations contained in the *Geotechnical Investigation Potential Seacliff Hazards for 121 and 125 Indio Drive and Florin Street Cul-de-Sac* by Cotton, Shires & Associates, Inc. dated January 2003. The Permittee shall undertake development in accordance with the approved final plans, and as otherwise described by the "Amended Project Description" submitted by Norbert H. Dall and Associates on April 22, 2003 and supplemented on

May 5, 2003, June 16, 2003, and June 25, 2003. Any proposed changes to the approved final plans shall be reported to the Executive Director. No changes to the approved final plans shall occur without a Commission amendment to this coastal development permit unless the Executive Director determines that no amendment is necessary.

2. **Construction Plan. PRIOR TO ISSUANCE OF THE COASTAL DEVELOPMENT PERMIT,** the Permittee shall submit a Construction Plan to the Executive Director for review and approval. The Construction Plan shall identify the specific location of all construction areas, all staging areas, and all construction access corridors in site plan view. Construction and staging zones shall be limited to the minimum area required to implement that approved project, and to minimize construction encroachment on the beach and intertidal areas, among other ways by using blufftop areas for staging and storing construction equipment and materials.

   The Construction Plan shall also identify the type and location of erosion control/water quality best management practices that will be implemented during construction to protect coastal water quality, including the following:

   (a) Silt fences, or equivalent apparatus, shall be installed at the perimeter of the construction site to prevent construction-related runoff and/or sediment from entering the Pacific Ocean, and shall be placed shall as close to the toe of the bluff as possible and beyond the reach of tidal waters.

   (b) All construction materials and equipment shall be removed in their entirety from the beach area by sunset each day that work occurs. The only exception shall be for the temporary erosion and sediment controls required above.

   (c) Grading are alteration of beach and intertidal areas outside of the approved construction zone is prohibited with one exception as follows: existing quarry stone in the vicinity of the Florin Street Outfall may be removed and or relocated in accordance with the final approved plans, using excavation equipment positioned landward of the waterline (i.e., excavator equipment with mechanical extension arms).

   (d) Equipment washing, refueling, and/or servicing shall not take place on the beach. All construction equipment shall be inspected and maintained at an off-site location to prevent leaks and spills of hazardous materials at the project site.

   (e) The construction site shall maintain good construction housekeeping controls and procedures (e.g., clean up all leaks, drips, and other spills immediately; keep materials covered and out of the rain (including covering exposed piles of soil and wastes); dispose of all wastes properly, place trash receptacles on site for that purpose, and cover open trash receptacles during wet weather; remove all construction debris from the beach).

   (f) All erosion and sediment controls shall be in place prior to the commencement of construction as well as at the end of each work day.

A copy of the approved Construction Plan shall be kept at the construction job site at all times and all persons involved with the construction shall be briefed on its content and meaning prior to commencement of construction. The Permittee shall notify planning staff of the Coastal Commission's Central Coast District Office at least 3 working days in advance of commencement of construction, and immediately upon completion of construction.

The Permittee shall undertake construction in accordance with the approved Construction Plan. Any proposed changes to the approved Construction Plan shall be reported to the Executive Director. No changes to the approved Construction Plan shall occur without a Commission amendment to this coastal development permit unless the Executive Director determines that no amendment is necessary.

3. **Site Drainage Plan. PRIOR TO ISSUANCE OF THE COASTAL DEVELOPMENT PERMIT,** the Permittee shall submit a Drainage Plan to the Executive Director for review and approval. The Drainage Plan shall specify permanent measures to collect all surface runoff from both 121 and 125 Indio Drive. This runoff shall either be stored in cisterns shown by the drainage plan and used for landscape irrigation, provided such irrigation use does not contribute to bluff instability in any way, or directed to Indio Drive. Surface drainage shall not be allowed to pond at the blufftop edge, sheet flow over the bluff, or be directly discharged to the beach or marine environment.

4. **Landscape Plan. PRIOR TO ISSUANCE OF THE COASTAL DEVELOPMENT PERMIT,** the Permittee shall submit a Landscape Plan prepared by a landscape professional experienced in invasive plant eradication and native bluff planting to the Executive Director for review and approval. The Landscape Plan shall provide for the planting of the reconstructed upper bluff area with native species appropriate to the area, in a manner designed to completely cover all exposed soils/geotextile fabric with vegetation, and to cascade over the seawall. Invasive species are prohibited. Any imported soil shall match the sandy soils present in the bluff, and shall be free of impurities that could affect the success of the native revegetation effort or would otherwise result in beach area degradation. The Landscape Plan shall clearly identify in site plan view the type, size, extent and location of all native plant materials to be used, as well as the method and extent of irrigation that will be used to ensure planting success.

   The approved landscaping shall be installed immediately upon completion of seawall construction. WITHIN ONE (1) MONTH OF COMPLETING SEAWALL CONSTRUCTION, all non-native and/or invasive plant species (e.g., iceplant) on the upper bluff area above the seawall shall be removed, all native species identified in the Landscape Plan shall be planted, and all drainage and irrigation facilities shall be installed and shall be in working order. The reconstructed upper bluff, as well as at least 3 feet of the upper seawall, shall be completely screened by the landscape plants within two years of the construction of the seawall. This screening shall be maintained for the life of the seawall; all native plantings shall be maintained in good growing conditions, including the use of appropriate irrigation and drainage apparatus, and shall be replaced as necessary to maintain the bluff vegetation consistent with the approved Landscape Plan.

   The Permittee shall undertake development in accordance with the approved Landscape Plan. Any proposed changes shall be reported to the Executive Director. No changes shall occur without a

Commission amendment to this coastal development permit unless the Executive Director determines that no amendment is necessary.

5. **Seawall Facing Verification.** PRIOR TO SURFACING THE SEAWALL, the Permittee shall arrange to have a small test section of the seawall faced consistent with the seawall surfacing component of the approved final plans specified in special condition 1. The small test section shall be located at the end of the seawall (to allow direct comparison between the natural bluff and the seawall) and a complete vertical section of the wave return and top of the seawall. After the small test section has been faced and allowed to cure to its final expected integral color, configuration, and texture, the Permittee shall notify planning staff of the Coastal Commission's Central Coast District Office to arrange for a site visit to verify that the seawall facing approximates the approved expected finished facing product shown in the approved plans and is consistent with their objective for this design element (i.e., it mimics the natural bluffs in the immediate vicinity and approximates a natural undulating bluff). At the Executive Director's discretion, the Permittee may submit photos of the test section to planning staff of the Central Coast District Office in lieu of the site visit. If planning staff should identify additional reasonable measures necessary to modify the facing in order to achieve consistency with the approved expected finished facing product and design objectives identified in the approved plans, then such measures shall be applied to the test section or a new test section. In such a case, after the small test section (or a new test section subject to the same criteria) has been faced and allowed to cure to its final expected color, configuration, and texture, the Permittee shall again notify planning staff of the Coastal Commission's Central Coast District Office to review the new or re-faced test section. The Permittee shall arrange for as many iterations of the facing and review process as necessary to achieve consistency with the objective of the approved plans for this design element. The seawall shall not be faced until planning staff of the Coastal Commission's Central Coast District Office has indicated in writing to the Permittee that the test section is consistent with the approved expected finished facing product and design objectives identified in the approved plans. After the Permittee has received written verification that the test section is in conformance, the Permittee shall face that portion of the remainder of the seawall to which facing is to be applied (pursuant to the approved plans) consistent with the approved test section facing. The approved integral color, configuration, and texture of the seawall facing shall be maintained throughout the life of the structure.

6. **Beach Area Restoration.** WITHIN THREE (3) DAYS OF COMPLETION OF SEAWALL CONSTRUCTION, the Permittee shall restore all beach areas and all beach access points impacted by construction activities to their pre-construction condition. Beach sands within the construction area shall be sifted as necessary to remove all construction debris.

7. **As-Built Plans.** WITHIN TWO (2) MONTHS OF COMPLETION OF SEAWALL CONSTRUCTION, the Permittee shall submit to the Executive Director for review and approval As-Built Plans for the seawall, cutoff wall, reconstructed bluff face, reconstructed shotcrete face, storm drain, and storm drain energy dissipater that include one or more permanent surveyed benchmarks inland of these structures for use in future monitoring efforts. The As-Built Plans shall identify the all property lines, the blufftop edge, and all blufftop development in site plan and cross-section views. The benchmark elevation(s) shall be described in relation to National Geodetic Vertical Datum

(NGVD). The As-Built Plans shall indicate vertical and horizontal reference distances from the surveyed benchmark(s) to survey points located along the top edge (on the edge closest to the sea) of the seawall/cutoff wall for use in future monitoring efforts. The survey points shall be identified through permanent markers, benchmarks, survey position, written description, et cetera to allow measurements to be taken at the same location in order to compare information between years.

8. **Public Access/Sand Supply Mitigation.** PRIOR TO ISSUANCE OF THE COASTAL DEVELOPMENT PERMIT, the Permittees shall submit evidence, in a form and content acceptable to the Executive Director, that $10,000 has been deposited in an interest bearing account by the Applicants, for public access improvements at the Florin Street cul-de-sac as a coastal viewpoint. This shall include at least native landscaping, park benches, attractive railing, and other necessary amenities, consistent with the LCP. The account shall be established in a manner that provides exclusive control over such account, and the use of any funds in it, to either the City of Pismo Beach or the State Coastal Conservancy, for the purposes set forth in this condition. The evidence to be provided to the Executive Director shall include documentation from either the City or the Conservancy acknowledging the agency's concurrence with being named the holder of the interest bearing savings account and its agreement to use the funds solely for the implementation of public access improvements to the Florin Street cul-de-sac. Any surplus funds available after these improvements are made shall be used for other access improvements in the immediate project vicinity, such as at Dinosaur Caves park. Implementation of these improvements may be subject to Coastal Development Permit review.

9. **Legal Interest to Undertake Development.** PRIOR TO ISSUANCE OF THE COASTAL DEVELOPMENT PERMIT, the Permittee shall submit to the Executive Director for review and approval, evidence that the Applicants have legal interest to undertake the proposed development seaward of the residences at 121 and 125 Indio Drive in the City of Pismo Beach (APN 010-205-001 and 010-250-002). Said evidence shall include: (a) Evidence that the County of San Luis Obispo or current easement holder, if not the County, has determined the development to be consistent with the terms of the County easement between the base of the bluff and Mean High Tide Line shown by Exhibit 6 and issued any County authorizations required for the development; or evidence that the County easement has been amended as necessary to allow for the approved development. And, (b) Evidence that City of Pismo Beach CDP # 97-030 and the associated Offer to Dedicate (Lateral Dedication) required by condition of that permit has been amended in a manner that authorizes the approved development in the area that was previously required by the City to be dedicated for public access and recreation purposes.

10. **Beach Access Easement.** PRIOR TO ISSUANCE OF THE COASTAL DEVELOPMENT PERMIT, the Permittee shall execute and record a document, in a form and content acceptable to the Executive Director, irrevocably offering to dedicate to a political subdivision, public agency or private association approved by the Executive Director either fee title or an easement for beach access (Beach Dedication). The Beach Dedication shall apply to that portion of the Permittee's property (APN 010-205-002) that is located to the west of the seawall location (see area identified as "Beach Dedication Area" on Exhibit 7). The recorded document shall include a legal description and a site plan of the

easement area and APN 010-205-002. The recorded document shall indicate that no development, as defined in Section 30106 ("Development") of the Coastal Act, shall occur in the easement area except for appropriately permitted construction activities associated with construction, maintenance, or repair of the seawall.

The offer to dedicate a beach access easement shall be recorded free of prior liens and encumbrances which the Executive Director determines may affect the interest being conveyed. The offer shall run with the land in favor of the People of the State of California, binding all successors and assignees, and shall be irrevocable for a period of 21 years, such period running from the date of recording.

11. **Monitoring.** The Permittee shall ensure that the condition and performance of the seawall, storm water outfall, and reconstructed bluff face is regularly monitored by a licensed civil engineer with experience in coastal structures and processes. At a minimum, the Permittee shall submit to the Executive Director for review and approval a monitoring report once every five years by May 1st (with the first report due May 1, 2008) for as long as the seawall exists at this site. Each report shall be prepared by a licensed civil engineer with experience in coastal structures and processes, and shall recommend actions needed to maintain or repair all elements of the seawall and reconstructed bluff face, including seawall facing, drainage, and upper bluff retentions systems.

12. **Shoreline Development Stipulations.** By acceptance of this permit, the Permittee acknowledges and agrees, on behalf of itself and all successors and assigns that:

    (a) No Further Seaward Encroachment. Any future response to coastal hazards (including but not limited to coastal hazards associated with shoreline erosion, stream erosion and scour, landslides, wave attack, etc.) requiring the placement of any additional protective measures, including, but not limited to, modifications to the as-built seawall, shall be constructed inland (i.e., toward the blufftop) of the location of the seawall.

    (b) Maintenance. It is the Permittee's responsibility to maintain the as-built seawall, the geotextile slope area above the seawall, the vegetative screening, and all irrigation and drainage systems in a structurally sound manner and their approved state, and to obtain all permits required for maintenance and repair activities.

    (c) Debris Removal. The Permittee shall immediately remove all rocks or debris that may fall from the project site onto the bluff, beach, or into the ocean. Any rocks that move seaward of the reconstructed revetment at the upcoast end of the seawall shall be immediately retrieved and either: (1) restacked within the approved rock slope profile; or (2) removed off the beach to a suitable disposal location. Any rock or debris to be retrieved in this manner shall be recovered by excavation equipment positioned landward of the waterline (i.e., excavator equipment with mechanical extension arms).

    (d) Assumption of Risk, Waiver of Liability and Indemnity Agreement. The Permittee acknowledges and agrees, on behalf of itself and all successors and assigns: (i) that the site is subject to hazards from episodic and long-term bluff retreat and coastal erosion, stream erosion

and scour, wave and storm events, bluff and other geologic instability, and the interaction of same; (ii) to assume the risks to the Permittee and the property that is the subject of this permit of injury and damage from such hazards in connection with this permitted development; (iii) to unconditionally waive any claim of damage or liability against the Commission, its officers, agents, and employees for injury or damage from such hazards; (iv) to indemnify and hold harmless the Commission, its officers, agents, and employees with respect to the Commission's approval of the project against any and all liability, claims, demands, damages, costs (including costs and fees incurred in defense of such claims), expenses, and amounts paid in settlement arising from any injury or damage due to such hazards; and (v) that any adverse effects to property caused by the permitted project shall be fully the responsibility of the landowner.

13. **Seawall Maintenance.** This Permit authorizes the Permittee and all successors and assigns to undertake the maintenance and debris removal required by Special Condition 11b and 11c above, provided that such activities do not increase the size or extent of the development authorized by this permit, and are carried out within the following parameters:

(a) Construction Operations. Maintenance and debris removal shall be undertaken consistent with the approved construction plan required by Special Condition 2, and all beach areas shall be restored to their pre-construction condition within 3 days of completing maintenance activities. Any proposed modifications to the approved construction plan and/or beach restoration requirements shall be reported to planning staff of the Coastal Commission's Central Coast District Office with the maintenance notification required below, and such changes shall require a coastal development permit amendment unless the Executive Director deems the proposed modifications to be minor in nature (i.e., the modifications would not result in additional coastal resource impacts).

(b) Other Agency Approvals. This Coastal Development permit does not obviate the need to obtain permits from other agencies for maintenance and/or repair activities. The Permittee is responsible for obtaining all necessary permits prior to undertaking any repair or maintenance actions.

(c) Maintenance Notification. At least 2 weeks prior to commencing any maintenance event, the Permittee shall notify, in writing, planning staff of the Coastal Commission's Central Coast District Office. The notification shall include a detailed description of the maintenance event proposed, and shall include any plans, engineering and/or geology reports, other agency authorizations, and other supporting documentation describing the maintenance event. The maintenance event shall not commence until the Permittee has been informed by planning staff of the Coastal Commission's Central Coast District Office that the maintenance event complies with this coastal development permit.

(d) Non-compliance Proviso. If the Permittee is not in compliance with the conditions of this permit at the time that a maintenance event is proposed, then the maintenance event that might otherwise be allowed by the terms of this future maintenance condition shall not be allowed by this condition.

(e) Duration of Covered Maintenance. Future maintenance under this coastal development permit is

allowed, subject to the above terms for five (5) years from the date of approval (i.e., until August 6, 2008). Maintenance can be carried out beyond the 5-year period if the Executive Director extends the maintenance term in writing.

14. **Storm Drain Maintenance.** The City of Pismo Beach shall be responsible for maintaining the storm water system installed under this permit, as follows:

    (a) All storm drain inlets, traps/separators, and/or filters shall be inspected to determine if they need to be cleaned out or repaired at the following iinimum frequencies: (1) prior to October 15th each year; (2) prior to April 15th each year; and (3) during each month that it rains between November 1st and April 1st. Clean-out and repairs (if necessary) shall be done as part of these inspections. At a minimum, all traps/separators, and/or filters must be cleaned prior to the onset of the storm season, no later than October 15th of each year; and,

    (b) Debris and other water pollutants removed from filter devices during clean-out shall be contained and disposed of in a proper manner; and

15. **Deed Restriction.** PRIOR TO ISSUANCE OF THE COASTAL DEVELOPMENT PERMIT, the Applicants shall submit to the Executive Director for review and approval documentation demonstrating that the Applicants has executed and recorded against the parcel(s) governed by this permit a deed restriction, in a form and content acceptable to the Executive Director: (1) indicating that, pursuant to this permit, the California Coastal Commission has authorized development on the subject property, subject to terms and conditions that restrict the use and enjoyment of that property; and (2) imposing the special conditions of this permit as covenants, conditions and restrictions on the use and enjoyment of the Property. The deed restriction shall include a legal description of the entire parcel or parcels governed by this permit. The deed restriction shall also indicate that, in the event of an extinguishment or termination of the deed restriction for any reason, the terms and conditions of this permit shall continue to restrict the use and enjoyment of the subject property so long as either this permit or the development it authorizes, or any part, modification, or amendment thereof, remains in existence on or with respect to the subject property.

10. De Novo Coastal Permit Findings

By finding a substantial issue in terms of the project's conformance with the certified LCP, the Commission takes jurisdiction over the CDP for the proposed project. The standard of review for this CDP determination is the City LCP and the Coastal Act access and recreation policies.

A. Geologic Conditions and Hazards

1.1 LCP Hazard Protection Standards

As described in the Substantial Issue findings, incorporated herein, Policies S-3, S-6, 17.078.050(3), 17.078.060(4) and 17.078.060 (6) address the use of shoreline protective devices and the need to ensure

long-term structural integrity, minimize future risk, and avoid additional, more substantial protective measures in the future.

S-3 Bluff SetBacks

All structures shall be set back a safe distance from the top of the bluff in order to retain the structures for a minimum of 100 years, and to neither create nor contribute significantly to erosion, geologic instability or destruction of the site or require construction of protective devices that would substantially alter natural landforms along the cliffs.

The City shall determine the required setback based on the following criteria:

a. For development on single family residential lots subdivided prior to January 23, 1981, the minimum bluff setback shall be 25 feet from the top of the bluff… A geologic investigation may be required at the discretion of the City Engineer, and a greater setback may be applied as the geologic study would warrant.

S-6 Shoreline Protective Devices

Shoreline protective devices, such as seawalls, revetments, groins, breakwaters, and riprap shall be permitted only when necessary to protect existing principal structures, coastal dependent uses, and public beaches in danger of erosion. If no feasible alternative is available, shoreline protection structures shall be designed and constructed in conformance with Section 30235 of the Coastal Act and all other policies and standards of the City's Local Coastal Program. Devices must be designed to eliminate or mitigate adverse impacts on local shoreline sand supply, and to maintain public access to and along the shoreline. Design and construction of protection devices shall minimize alteration of natural landforms, and shall be constructed to minimize visual impacts. The City shall develop detailed standards for the construction of new and repair of existing shoreline protective structure and devices. As funding is available, the City will inventory all existing shoreline protective structures within its boundaries.

17.078.060 Shoreline Protection Criteria and Standards

(4) *Seawalls shall not be permitted unless the City has determined that there are no other less environmentally damaging alternatives for protection of existing development or coastal dependent uses. If permitted, seawall design must a) respect natural landforms; b) provide for lateral beach access; and c) use visually compatible colors and materials and will eliminate or mitigate any adverse impacts on local shoreline sand supply.*

(6) *Shoreline structures…which serve to protect existing structures…and that may alter natural shoreline processes shall not be permitted unless the City has determined that when designed and sited, the project will: (a) Eliminate or mitigate impacts on local shoreline sand supply; (b) Provide lateral beach access; (c) Avoid significant rocky points and intertidal or subtidal areas; (d) Enhance public recreational opportunities.*

1.2 Geologic Hazard Analysis

Policy S-6 acknowledges that seawalls, revetments, groins, rip-rap and other such structural or "hard"

methods designed to forestall erosion also alter natural shoreline processes. Accordingly, S-6 limits the construction of shoreline protective works to those required to protect existing structures or public beaches in danger from erosion. The LCP provides these limitations because shoreline structures have a variety of negative impacts on coastal resources including adverse affects on sand supply, public access, coastal views, natural landforms, and overall shoreline beach dynamics on and off site, ultimately resulting in the loss of beach.

In addition, S-6 only applies to existing *principal* structures. We must always consider the specifics of each individual project, but generally accessory structures (such as patios, decks, gazebos, stairways, rear yards, etc.) are not required to be protected under S-6. Permitted at-grade structures within coastal erosion setback areas are expendable and capable of being removed rather than requiring a bluff armoring device that would alter natural landforms and shoreline processes along the bluffs, cliffs, and beaches.

Under section S-6 of certified LCP, a shoreline structure must be approved if: (1) there is an existing *principal* structure; (2) the existing structure is in danger of erosion; (3) a shoreline altering device is required to protect the existing threatened structure; (4) the required device is designed to eliminate or mitigate its adverse impacts on shoreline sand supply and maintain public access; and (5) design and construction of armoring devices shall minimize alteration of natural landforms and minimize visual impacts. The first three requirements relate to whether the proposed armoring is necessary, while the fourth and fifth requirements apply to mitigating the impacts from it.

1.2.1 Structures to be Protected

The City of Pismo Beach LCP mirrors the Coastal Act Section 30253 in regards to the need to ensure long-term structural integrity, minimize future risk, and avoid additional, more substantial protective measures in the future. Under LCP Policy S-3 and Coastal Act Section 30253, new blufftop development must be setback a sufficient distance from the bluff edge to allow the natural process of erosion to occur without creating a need for a shoreline protective device. At a minimum, new development should be set back far enough to protect the principal structures from erosion for the reasonable economic life of the project (a minimum of 100 years per City policy). Under this approach, obviously, future erosion of the setback area (including even undercutting and large block failure) is to be expected.

The original construction of the residence at 121 Indio is unknown, though review of aerial photos from 1970 suggests that it is pre-Coastal Act. The City approved construction of the residence at 125 Indio in May of 1997. At that time, the City relied upon the Applicant's site specific geotechnical report which estimated a 2-inch per year retreat rate for the site, to require the residence be set back an LCP minimum 25 feet from the bluff edge. With this setback, the City found that after 100 years of erosion, there would still be approximately 8 feet of blufftop between the proposed residence and the bluff edge. In approving the project, the City implicitly found that shoreline protective devices (such as this current request) would not be required to protect the residence for the life of the structure and that the project would not result in the loss of public beach access, diminished sand supply, degraded visual resources and natural landforms, and that the public will not be held responsible for any future stability problems.

1.2.2 Danger from Erosion

However, since that time, the property owner has obtained additional information indicating that existing setbacks are not adequate. The LCP allows shoreline armoring to protect existing structures in danger from erosion, but it does not define the term "in danger." There is a certain amount of risk in maintaining development along a California coastline that is actively eroding and can be directly subject to violent storms, large waves, flooding, earthquakes, and other geologic hazards. These risks can be exacerbated by such factors as sea level rise and localized geography that can focus storm energy at particular stretches of coastline. As a result, some would say that all development along the immediate California coastline is in a certain amount of "danger." It is a matter of the degree of threat that distinguishes between danger that represents an ordinary and acceptable risk, and danger that requires shoreline armoring per S-6 of the LCP. Lacking a definition, the Commission's long practice has been to evaluate the immediacy of any threat in order to make determinations as to whether an existing structure is "in danger." While each case is evaluated based upon its own particular set of facts, the Commission has generally interpreted "in danger" to mean that an existing structure would be unsafe to occupy in the next two or three storm cycles (generally, the next few years) if nothing were to be done (i.e., in the no project alternative).

As was shown in the substantial issue findings above, at the time of the Commission's appeal, the Applicant's consulting engineers and geologists did not adequately demonstrate a threat to either residence at 121 or 125 Indio. However, since that time, the Applicant's team of geologists and engineers has submitted the following additional evidence to support the allegations that the structures may indeed be threatened.

- *Geotechnical Investigation of Potential Seacliff Hazards* by Cotton, Shires, & Associates, Inc., dated January 23, 2003 (CSA);
- Coastal Hazard Study by Skelly Engineering dated February 17, 2003 (SE).

The Applicant's geotechnical consultants conclude that the residences at 121 and 125 Indio are in danger from erosion. The existing residences are currently located approximately 13' and 20' respectively from the bluff edge. The bluff has eroded to a nearly vertical seacliff and is made up of mainly poorly consolidated marine terrace deposits. There is very little bedrock present in the bluff face at 125 Indio.

Staff Geologist, Mark Johnsson, reviewed the additional geologic reports prepared by the Applicant's consultants (Cotton, Shires, and Associates, Inc., January 2003 and Skelly Engineering, February 2003) and determined that they provide a far more complete analysis of the geologic setting at the subject site than that which accompanied the prior project approved by the City.

Dr. Johnsson noted that the data provided on long-term bluff retreat was in accord with the previous set of geologic reports. He further acknowledged that the rate of bluff retreat has varied through time and that the rates appear highest in the most recent time interval. Insufficient data exists, however, to document that the long-term erosion rate is increasing in any systematic way. That said, anecdotal evidence provided by the Applicant suggested that as much as 5 –6 feet of bluff had collapsed during a single storm season in the winter of 1997 – 1998. The El Nino winter of 1997 – 1998 produced the wettest February on record since records began in 1967. Nearly 22" of rain fell on the central California from late January through

February. It was during this time that the Applicant indicated a massive bluff failure along the southwest edge of 125 Indio occurred eliminating 5 feet of bluff top. Staff's geologist found that while a single event of similar magnitude would not immediately threaten the structures, two consecutive such events may, indeed, place the structures at risk.

Coastal bluffs are subject to landslides, which have the capacity to place structures on blufftops at risk. Measuring the degree of threat thus also requires evaluating the stability of the bluff materials themselves and their ability to resist collapse.

A landslide occurs because a number of factors come together; these include the overall geometry of the hillside (or bluff), decreases in the effective normal stress at depth caused by increased water in the slope (buoyancy forces); and the strength of the bluff materials themselves. Landslides on coastal bluffs occur at least partly because marine erosion continually undermines the toe of the bluff, creating an unsupported geometry that is prone to landsliding. The risk of landslide can be quantified, to some extent, by taking the forces resisting a landslide (principally the strength of the materials along a potential slide plane) and dividing them by the forces driving a landslide (principally the weight of the materials as projected onto the potential slide plane). If the quotient, called the factor of safety, is 1.0, failure is imminent. The factor of safety should never, in theory, be below 1.0, as a slide would have already occurred. Factors of safety greater than 1.0 lead to increasing confidence that the bluff is safe from failure.

Slope stability can be evaluated quantitatively by a "slope stability analysis." In practice, hundreds of potential slide planes are typically evaluated. The one with the lowest factor of safety is the one on which failure will occur. So the potential slide plane with the minimum factor of safety is the appropriate one to design for. If one steps back far enough from the edge of the bluff, potential slide planes intersecting the top of the bluff generally will have higher and higher factors of safety. A factor of safety of greater than or equal to 1.5 is the industry standard for new development to be "safe" from a landslide. During an earthquake, additional forces act on the bluff, and a landslide is more likely. To test for the stability during an earthquake, a "pseudostatic" slope stability analysis can be performed. This analysis is rather crude, but the standard methodology is to apply a "seismic coefficient" of 15% of the force of gravity (0.15g), the force of which is added to the forces driving the landslide. The standard for new development in California is to assure a minimum factor of safety greater than or equal to 1.1 in the pseudostatic case.

The consultants provided a slope stability analysis of the site, which Dr. Johnsson found generally appropriate, if conservative (i.e., they assume a "worse-case" scenario). The CSA report, citing standards for new development articulated by the California Geologic Survey, suggests that the fact that the slope shows a static factor of safety of less than 1.5 and a pseudostatic factor of safety of less than 1.2 indicates that the structures are at risk. This is inappropriate. Standards for new development are intended to assure stability with adequate margins of error for the lifetime of the development. Typically, the Commission requires that a much higher level of risk be demonstrated before a shoreline protective device be permitted. Towards this end, the more convincing information that has been submitted to support the need for a seawall, are the seismic analyses for both wedge-type or circular failure surfaces, which show that the pseudostatic factor of safety drops below 1.0 within the footprint of both 121 and 125 Indio Drive, as well as within the Florin Street cul-de-sac. The static analyses indicates a much higher factor of safety, although a small portion of the structure at 121 Indio Drive, as well as the Florin Street end, lie seaward

of the 1.1 (or less) factor of safety line. If the bluff materials were saturated with ground water, such as might occur following a series of storms, a major earthquake could cause the bluff to collapse, and the residences are located sufficiently close to the most likely failure surfaces that they would be damaged or destroyed. This conclusion was also reached by the City's third party reviewer Earth Systems Pacific. Although, the ground water level assumed in the analysis is likely higher than would be encountered during typical summer or even winter conditions, Dr. Johnsson concluded that a conservative approach is warranted given that elevated ground water level is possible and would represent the critical case for slope stability. Staff concluded that the evidence presented by the analyses demonstrated that a sufficiently low factor of safety exists for the static and psuedo-static condition to indicate that the structures are at risk.

This site presents some unique geologic conditions and facts that complicate the degree of threat evaluation. The materials exposed in the bluff are highly erodable, consisting almost entirely of nearly cohesionless sand. These erodable materials are subject to wave attack, as the marine terrace deposits make up the majority of the sea cliff. Because of this, there is little margin for error in determining risk in a no project, no revetment scenario. When all the factors are considered together, and evaluated in the context of an extreme storm event, the Applicant's consulting geotechnical engineers and geologist have concluded that the existing residence is in danger of being undermined. The Commission's geologist has concluded that the evidence is borderline regarding whether the existing structure is "in danger from erosion" at this time. But the fact that waves now routinely impact an area that consists of poorly consolidated marine terrace material indicates that, absent some form of shore protection, a clear danger from erosion would exist in the very near future. To err on the side of protecting life and property, it is prudent to conclude in this case that the existing structure are in danger from erosion.

As such, the residences qualify as an existing structure in danger from erosion for purposes section S-6 of the certified LCP.

1.2.3 Feasible Protection Alternatives to a Shoreline Structure

The second test of the LCP that must be met is that the proposal to alter the shoreline must be the least environmentally damaging feasible alternative. Section 21080.5(d)(2)(A) of CEQA likewise prohibits a proposed development from being approved if there are feasible alternatives or feasible mitigation measures available that would substantially lessen any significant adverse effect that the activity may have on the environment. Other alternatives typically considered include: the "no project" alternative; abandonment of threatened structures; relocation of the threatened structures; and drainage and vegetation measures.

In this case, the "no project" alternative is not viable because the existing threatened structures would not be protected without some form of armoring. Staff spent considerable time evaluating project options and there are, likewise, no feasible alternative projects that can protect the existing threatened structures at this location. Relocation is not feasible due to cost and limited amount area to relocate the structure. "Soft" options like aggressive vegetation planting and drainage controls aren't sufficient in this case where there is a nearly vertical coastal bluff comprised almost entirely of unconsolidated marine terrace materials

subject to ongoing wave attack and vulnerable to seismic shock. Even were the buildings to be relocated, because there isn't locations that could be considered "safe" for an extended period of time given the limited bluff top lot size, the relocated structures would themselves likely be threatened in the relatively near future. Thus, some form of hard armoring is required to protect the existing threatened residences.

In terms of hard armoring, there are also a variety of projects that could be considered. The Applicants evaluated an extension of the existing upcoast rip-rap and decided that this option would cover a substantial portion of the back beach area and be even more visually intrusive than the City-approved wave deflector. Staff also requested the Applicant evaluate a system of drilled caissons for protecting the residences at 121 and 125 Indio. The idea is that a row of reinforced concrete piers could be located landward of the bluff edge yet seaward of the homes and would be spaced close enough together to retain the earth between the piers and stabilize the slope. This alternative was initially attractive because it would address the slope stability concerns of the property without intruding onto the beach or in the public viewshed. Based on the geologic conditions and soil type on the subject property, however, it was the opinion of the Applicant's consulting geologist that this system would be relatively ineffective to curtail erosion and potential slumping unless a significant number of caissons were placed into the bluff. This drives up the cost of the alternative and could introduce significant construction safety problems associated with attempting to drill into an unstable bluff. The consulting geologist further concluded that the system would not result in a permanent solution and would lead to an ongoing need to shotcrete the bluff as the piers become day-lighted, ultimately resulting in a much larger (greater in height) structure.

The alternative proposed by the Applicants involves a recurved, concrete, bluff colored, contoured and sculptured vertical wall. The vertical wall is proposed to have a footprint that is only 18 inches wide and would occupy a much smaller footprint than either rip-rap or the City approved concrete wave deflector. The Applicants propose to extend the wall 165 feet from behind the City-owned Florin Street storm water outfall to the southeast property line at 121 Indio. Please see Exhibit 4. In order to address wave run-up during high surf and extreme high tides, the height of the structure will reach to between 15 feet and 20 feet from its toe. This wall will be anchored approximately 7 feet into competent bedrock to ensure that it will not be undermined by ongoing erosive forces and wave attack. This alternative has several components including a cut-off wall at both the upcoast and downcoast end of the structure to prevent flanking and to tie the wall into the existing revetment on the upcoast end; removal and replacement of the City's failed storm water outfall at the Florin Street end; bracing and filling a rapidly expanding seacave adjacent to the storm water outfall and similar treatment of a smaller feature at the southeast end of 121 Indio; and repairing and resurfacing the existing shotcrete wall seaward of 121 Indio.

The proposed alternative is superior to the City- approved wave deflector or a rip-rap revetment because it minimizes the footprint on the sandy beach area, is much less visually intrusive, and it addresses problems associated with the failed storm water outfall. The recurved wall alternative, however, is not without shortcomings. Even though the footprint is small, it will occupy approximately 250 square feet of backshore area that has been dedicated for lateral public and passive recreational use. Armoring the bluff will eliminate any sand contribution into the littoral cell from this location. Fixing the back beach could cause additional sand scour in and around the small cove beach seaward of the residences. Visual impacts could range from minimal to substantial depending upon the level of detail put into coloring, re-

contouring, sculpting, and mimicking the natural bluff face. And ultimately, with ongoing sea level rise, fixing the back beach could preclude any public access in the future. In addition, impacts associated with construction of the seawall, if not adequately addressed, could foul coastal waters and/or result in sediment, debris, and other wastes entering the Pacific Ocean, as further discussed below.

1.2.4 Sand Supply Impacts

The third test of LCP Policy S-6 (and mirrored by 17.078.060(4)) that must be met in order to require Commission approval is that shoreline structures must be designed to eliminate or mitigate adverse impacts to local shoreline sand supply.

Shoreline Processes

Beach sand material comes to the shoreline from inland areas, carried by rivers and streams; from offshore deposits, carried by waves; and from coastal dunes and bluffs, becoming beach material when the bluffs or dunes lose material due to wave attack, landslides, surface erosion, gullying, et cetera. Coastal dunes are almost entirely beach sand, and wind and wave action often provide an on-going mix and exchange of material between beaches and dunes. Many coastal bluffs are marine terraces – ancient beaches which formed when land and sea levels differed from current conditions. Since the marine terraces were once beaches, much of the material in the terraces is often beach quality sand or cobble, and a valuable contribution to the littoral system when it is added to the beach. While beaches can become marine terraces over geologic time, the normal exchange of material between beaches and bluffs is for bluff erosion to provide beach material. Bluff retreat and erosion is a natural process resulting from many different factors such as erosion by wave action causing cave formation, enlargement and eventual collapse, saturation of the bluff soil from ground water causing the bluff to slough off and natural bluff deterioration. When the back-beach or bluff is protected by a shoreline protective device, the natural exchange of material either between the beach and dune or from the bluff to the beach will be interrupted and, if the shoreline is eroding, there will be a measurable loss of material to the beach. Since sand and larger grain material is the most important component of most beaches, only the sand portion of the bluff or dune material is quantified as beach material.

These natural shoreline processes affecting the formation and retention of sandy beaches can be significantly altered by the construction of shoreline armoring structures since bluff retreat is one of several ways that beach quality sand is added to the shoreline. Bluff retreat and erosion is a natural process resulting from many different factors (such as erosion by wave action causing cave formation, enlargement and eventual collapse, saturation of the bluff soil from ground water causing the bluff to slough off and natural bluff deterioration); shoreline armoring directly impedes these natural processes.

The subject site is located within a sub-cell of the Santa Maria Littoral Cell between Point Buchon and Point Sal. Because the shoreline is aligned nearly parallel to the prevailing waves, the net longshore transport carries a relatively small volume of sand estimated to be approximately 60,000 cubic yards of beach quality materials annually.[1] The dominant direction of longshore transport in this sand supply system

[1] United States Army Corps of Engineers (USACOE), Los Angeles District, 1986.

is north north-west to south south-east. Materials in this system have been estimated to come mainly from coastal streams and rivers, bluffs, and from coastal ravines and sand dunes.

Some of the effects of engineered armoring structures on the beach (such as scour, end effects and modification to the beach profile) are temporary or are difficult to distinguish from all the other actions that modify the shoreline. Others are more qualitative (e.g., impacts to the character of the shoreline and visual quality). Some of the effects that a shoreline structure may have on natural shoreline processes can be quantified, however, including: (1) the loss of the beach area on which the structure is located; (2) the long-term loss of beach which will result when the back beach location is fixed on an eroding shoreline; and (3) the amount of material which would have been supplied to the beach if the back beach or bluff were to erode naturally.[2]

Fixing the back beach

Experts generally agree that where the shoreline is eroding and armoring is installed, as is the case here, the armoring will eventually define the boundary between the sea and the upland. On an eroding shoreline fronted by a beach, the beach will be present as long as some sand is supplied to the shoreline. As erosion proceeds, the profile of the beach also retreats. This process stops, however, when the retreating shoreline comes to a revetment or a seawall. While the shoreline on either side of the armor continues to retreat, shoreline retreat in front of the armor stops. Eventually, the shoreline fronting the armor protrudes into the water, with the mean high tide line fixed at the base of the structure. In the case of an eroding shoreline, this represents the loss of a beach as a direct result of the armor.

In addition, sea level has been rising slightly for many years. In the Pismo Beach area, the trend for sea level has been an increase of nearly 4 inches per 50 years.[3] Also, there is a growing body of evidence that there has been a slight increase in global temperature and that an acceleration in the rate of sea level can be expected to accompany this increase in temperature over time. Mean water level affects shoreline erosion several ways and an increase in the average sea level will exacerbate all these conditions. On the California coast the effect of a rise in sea level will be the landward migration of the intersection of the ocean with the shore. On a gently sloped beach, with a slope of 40:1, every inch of sea level rise will result in a 40-inch landward movement of the ocean/beach interface.[4] This, too, leads to loss of the beach when combined with the fixing of the back beach.

The Commission has established a methodology for calculating the long-term loss of beach due to fixing the back beach, this impact being equal to the long-term erosion rate multiplied by the width of property, which has been fixed by a resistant shoreline protective device.[5] Using this formula, and assuming 6" of

---

[2] The sand supply impact refers to the way in which the project impacts creation and maintenance of beach sand. Although this ultimately translates into beach impacts, the discussion here is focused on the first part of the equation and the way in which the proposed project would impact sand supply processes.

[3] NOAA, National Ocean Service.

[4] In other words, a one-inch rise in sea level can result in three and a third feet of beach loss.

[5] The area of beach lost due to long-term erosion (Aw) is equal to the long-term average annual erosion rate (R) times the number of years that the back-beach or bluff will be fixed (L) times the width of the property that will be protected (W). This can be expressed by the following equation: Aw = R x L x W.

erosion per year and 165 linear feet of bluff, the impact would translate in this case to roughly 82.5 square feet per year or 4,125 square feet over the life of the project (i.e., 50 years).[6] This figure represents the impact associated with the *new* armoring of the bluff seaward of 121 and 125 Indio. To convert the 82.5 square foot loss of beach per year into the volume of sand necessary to restore the beach commensurately in cubic yards, coastal engineers use a conversion value representing units of cubic yards per square foot of beach.[7] In this case, the Commission has not been able to establish an actual conversion factor for the Pismo Beach vicinity. However, if a 1.0 conversion factor is used (i.e., the low end of the spectrum of values typically assumed by coastal engineers), a conservative estimate of the cubic yard equivalent of 82.5 square feet per year can be calculated. Using the sand conversion factor of 1.0, the direct loss of beach due to fixing the back beach translates into a yearly impact of 82.5 cubic yards of sand.

Encroachment on the Beach

Shoreline protective devices such as the seawall proposed are all physical structures that occupy space. When a shoreline protective device is placed on a beach or backshore area, the underlying area cannot be used as beach. This generally results in a loss of public access as well as a loss of sand and/or areas from which sand generating materials can be derived. The area where the structure is placed will be altered from the time the protective device is constructed, and the extent or area occupied by the device will remain the same over time, until the structure is removed or moved from its initial location, or in the case of a revetment, as it spreads seaward over time. The backshore or beach area located beneath a shoreline protective device, referred to as the encroachment area, is the area of the structure's footprint.

In this case, the seawall's base would occupy roughly 247.5 square feet of backshore space.[8] Using the conversion discussed above, this translates into a one-time impact of 247.5 cubic yards of sand.

Retention of Potential Beach Material

If natural erosion were allowed to continue (absent the proposed armoring), some amount of beach material would be added to the beach at this location, as well as to the larger littoral cell sand supply system fronting the bluffs. Because littoral drift at this location is from up to downcoast (towards the adjacent planning areas to the south in Pismo Beach) the impact would be relatively more towards the South Palisades and Spyglass planning areas than upcoast along Indio Drive. The volume of total material that would have gone into the sand supply system over the lifetime of the shoreline structure would be the volume of material between (a) the likely future bluff face location with shoreline protection; and (b) the

[6] Six inches is the long-run erosion rate identified in the geotechnical reports for the project site.

[7] This conversion value is based on the regional beach and nearshore profiles, and overall characteristics. When there is not regional data to better quantify this value, it is often assumed to be between 1 and 1.5, the idea being that to build a beach seaward one foot, there must be enough sand to provide a one-foot wedge of sand through the entire region of onshore-offshore transport. If the range of reversible sediment movement is from -30 feet msl to +10 feet msl, then a one-foot beach addition must be added for the full range from -30 to +10 feet, or 40 feet total. This 40-foot by 1 foot square parallelogram could be built with 1.5 cubic yards of sand (40 cubic feet divided by 27 cubic feet per cubic yard). If the range of reversible sediment transport is less than 40 feet, it will take less than 1.5 cubic yards of sand to rebuild one square foot of beach; if the range of reversible sediment transport is larger than 40 feet, it will take more than 1.5 cubic yards of sand to rebuild one square foot of beach.

[8] Note that this is based upon a footprint area that is 1.5 feet wide and 165 feet long.

likely future bluff location without shoreline protection. Since the main concern is with the sand component of this bluff material, the total material lost must be multiplied by the percentage of bluff material which is beach sand, giving the total amount of sand which would have been supplied to the littoral system for beach deposition if the proposed device were not installed. The Commission has established a methodology for identifying this impact.[9] The Applicants consultants indicate that this impact would be roughly 330 cubic yards. This estimate was based on the conclusion that only 7% - 8% of terrace materials and bedrock contains local sand-sized beach particles. The CSA report did note, however, that upwards of 54% of the terrace deposits and 40% of the bedrock would degrade to sand-sized particles including sizes not typically found in the local beach sand. Elsewhere in Pismo Beach, marine terrace deposits typically consist of a much greater percentage of sand. At the site of the Cliff's Hotel, the sand content of the upper bluff was estimated to be in the 10% - 15% range, while the lower portion of the bluff had a terrace layers that were estimated to consist of nearly 85% sand material. Staff engineer, Lesley Ewing, has noted that the smaller sand size material often performs an important role in the offshore portion of the beach. The Commission normally uses the complete sand fraction, which would include a broader range of sand sizes. It appears from the figures provided by the Applicant's consultants that a very restrictive definition of beach quality sand was used. If the complete sand fraction is quantified (i.e., 54%/40% estimated by CSA), the total amount of sand retained by armoring the shoreline at this location is 2,350 cubic yards over the life of the project.

Sand Supply Impacts Conclusion

The proposed revised seawall will have a quantifiable sand supply impact. The Applicants have designed the project to reduce some of these impacts (e.g., by reducing the footprint of the wall), but they cannot be eliminated. Therefore, some mitigation is necessary to offset these impacts for the project to be found consistent with the certified LCP.

Beach nourishment is a common response to sand supply problems, a formal sand replenishment strategy can introduce an equivalent amount of sandy material back into the system to mitigate the loss of sand that would be caused by a protective device. Such an introduction of sand, if properly planned, can feed into the littoral cell sand system to mitigate the impact of the project. However, there are not currently any existing beach nourishment programs directed at this beach area. Absent a comprehensive program that provides a means to coordinate and maximize the benefits of mitigation efforts in the area now and in the future, the success of such piecemeal mitigation efforts is questionable.

---

[9] The equation is Vb = (S x W x L) x [(R x hs) + (1/2hu x (R + (Rcu - Rcs)))]/27. Where: Vb is the volume of beach material that would have been supplied to the beach if natural erosion continued (this is equivalent to the long-term reduction in the supply of bluff material to the beach resulting from the structure); S is the fraction of beach quality material in the bluff material; W is the width of property to be armored; L is the design life of structure (50 years assumed per CSA) or, if assumed a value of 1, an annual amount is calculated; R is the long term average annual erosion rate; hs is the height of the shoreline structure; hu is the height of the unprotected upper bluff; Rcu is the predicted rate of retreat of the crest of the bluff during the period that the shoreline structure would be in place, assuming no seawall were installed (this value can be assumed to be the same as R unless the Applicant provides site-specific geotechnical information supporting a different value); Rcs is the predicted rate of retreat of the crest of the bluff, during the period that the seawall would be in place, assuming the seawall has been installed (this value will be assumed to be zero unless the Applicant provides site-specific geotechnical information supporting a different value); and divide by 27 (since the dimensions and retreat rates are given in feet and volume of sand is usually given in cubic yards, the total volume of sand must be divided by 27 to provide this volume in cubic yards, rather than cubic feet).

As an alternative mitigation mechanism, an in-lieu fee is oftentimes used by the Commission when in-kind mitigation of impacts is not available. In situations where ongoing sand replenishment programs are not yet in place, the in-lieu sand mitigation fee is deposited into an account until such time as an appropriate program is developed and the fees can then be used to offset the designated impacts. Though, the sand supply mitigation fees that have been collected in the past in the Central Coast District area have not yet been applied to any sand nourishment programs to date, and have not yet resulted in any physical sand supply mitigation as a result. [10]

The Applicants have proposed mitigation in the form of placing 330 cubic yards of suitable beach sand as beach nourishment or a commensurate one-time in-lieu fee payment to the City equal to the cost of placing an equivalent amount of beach nourishment sand into the littoral sub-cell, for the impacts at this site. This mitigation includes impacts for the retention of potential beach material. As noted above, the Applicant's proposed mitigation underestimates the quantity of beach sand contained in the bluff and hence the proposed mitigation is inadequate. Assuming the 54% / 40% sand content of the bluff materials, the loss to the littoral cell in this case would amount to 2,350 cubic yards. Depositing this amount of sand at one time onto the pocket beach at this location would have significant resource impacts of its own and do little to address the long-term impacts associate with sand loss over the next 50 years, particularly the loss of beach fronting the shoreline structure due to the fixing of the back beach. In the short run, this amount of sand would smother the near shore intertidal area and introduce additional traffic, noise, and air quality impacts associated with transporting and depositing the sand. It would take 117 tractor-trailer loads to transport an equivalent volume of sand. Furthermore, the normal shoreline processes would eventually wash away the excess sand within a short period of time and there would be no future sand contributions in subsequent years over the life of the project. Thus, a one-time sand deposition for mitigation of sand loss is inappropriate.

Recent estimates to deliver beach quality sand to Pismo Beach beaches are roughly $26 a cubic yard. With respect to an in-lieu fee, based on cost estimates to supply 1 cubic yard of sand to this location, the mitigation proposed of 330 cubic yards proposed by the Applicant would be $ 8,580. Again, as noted in the findings above, the Applicants proposed mitigation is disproportionate to the associated sand loss impact of retaining bluff materials over the life of the project. The mitigation fee associated with 2,350 cubic yards of sand loss is not inconsequential. Based on the estimates of $26 per cubic yard of clean, delivered, beach quality sand, the mitigation fee is $ 61,100.

Unfortunately, the City does not yet have a formal beach nourishment and mitigation program in place. Moreover, the sand supply mitigation fees that have been collected in the past in the Central Coast District area have not yet been applied to any sand nourishment programs to date, and have not yet resulted in any physical sand supply mitigation as a result. Thus, at this time there is no meaningful way to adequately mitigate for the loss of sand retained by the proposed seawall.

1.2.5 Long Term Structural Stability and Assumption of Risk

[10] The Motroni-Bardwell case upcoast of this site in Capitola (CDP 3-97-065), the Panattoni case downcoast in Carmel (CDP 3-98-102). These fees were collected in 1998 and 1999 respectively.

Pursuant to LCP section 17.078.060(5), development is to be designed, sited, and built to allow for natural shoreline processes to occur without creating a need for additional more substantive armoring. Coastal development permittees for new shorefront development thus are essentially making a commitment to the public (through the approved action of the City, and its state government counterparts) that, in return for building their project, the public will not lose public beach access, sand supply, visual resources, and natural landforms, and that the public will not be held responsible for any future stability problems. LCP section 17.078.060(5), requires that the proposed project assure structural stability without the need for additional armoring. The proposed project involves development in an area that is inherently unstable and has been designed by engineers with experience in coastal armoring projects to provide protection for 50 years or more.

Assumption of Risk

The experience of the Commission in evaluating the consistency of proposed developments with LCP policies regarding development in areas subject to problems associated with geologic instability, wave, and/or erosion hazard, has been that development has continued to occur despite periodic episodes of heavy storm damage, landslides, or other such occurrences. Development in such dynamic environments is susceptible to damage due to such long-term and episodic processes. Past occurrences statewide have resulted in public costs (through low interest loans, grants, subsidies, direct assistance, etc.) in the millions of dollars. As a means of allowing continued development in areas subject to these hazards while avoiding placing the economic burden on the people of the State for damages, Applicants are regularly required to acknowledge site geologic risks and agree to waive any claims of liability on the part of the Commission for allowing the development to proceed.

There are inherent risks associated with development on and around seawalls and eroding bluffs in a dynamic coastal bluff environment; this applies to the project proposed as well as for the development landward of the bluffs themselves. The seawall project site, and all development inland of it, is likely to be affected by shoreline erosion in the future.

Although the Commission has sought to minimize the risks associated with the development proposed in this application, the risks cannot be eliminated entirely. Given that the Applicants have chosen to pursue the development despite these risks, the Applicants must assume these risks. Accordingly, this approval is conditioned for the Applicants to assume all risks for developing at this location (see special condition 12d).

No Seaward Encroachment

Section 17.078.060(5) of the LCP requires that the seawall structure not create the need for additional more substantive armoring in the future. Such potential future armoring could include seaward encroachment that would give rise to another level of potential LCP (and Coastal Act) inconsistency inasmuch as it would occupy recreational sandy beach and increase the amount of armoring within the beach area public viewshed. Further, to allow a project that would itself require additional armoring seaward of that existing revetment would not be consistent with Section 17.078.060(5) because stability and structural integrity must be assured without reliance on future armoring. Therefore, to protect the

beach area seaward of the seawall consistent with the certified LCP, the Commission finds that no further seaward encroachment is allowed in the future (see special condition 12).

Monitoring, Maintenance, and Long-Term Stability

If the seawall was damaged in the future (e.g. as a result of wave action, storms, landslides, etc.) it could threaten the stability of the site, which could lead to need for more bluff alteration and/or additional or more substantive armoring. In addition, the upper bluff soils must be adequately stabilized with vegetation, and upper bluff drainage controlled, to ensure overall stability. Long-rooted non-invasive native plant species should be used for this purpose.[11] In a bluff setting, these species can help to stabilize bluff soils, minimize irrigation of the bluff (again helping to stabilize the bluff), and can help to avoid bluff failure and sloughing in some cases (e.g., mats of iceplant can become so heavy that they rip out of the bluff, particularly in saturated situations, taking bluff materials with them). They also help to create a more natural (to the bluff area) looking natural landform, helping to offset visual impacts of unnatural structures along bluffs (see also visual findings below).

Therefore, in order to find the proposed project consistent with the LCP, the Commission finds that the condition of the seawall, the bluff plantings, and the drainage controls in their approved state must be maintained for the life of the seawall. Further, in order to ensure that the Permittee and the Commission know when repairs or maintenance are required, the Permittee must monitor the condition of the seawall and the bluff over the long term. The monitoring will ensure that the Permittee and the Commission are aware of any damage and can determine whether repairs or other actions are necessary to maintain the seawall and bluff measures in their approved state before such repairs or actions are undertaken. Finally, such future monitoring and maintenance activities must be understood in relation to clear as-built plans.

Therefore, special conditions are attached to this approval for the submittal of as-built plans (to define the footprint and profile of the permitted structures) with surveyed reference points to assist in evaluation of future proposals at this site (see special condition 7) and drainage and non-invasive native vegetation parameters for the bluff area (see special conditions 3 & 4). For monitoring, the Applicant is responsible for ensuring adequate monitoring of the seawall and is required to submit a monitoring report on five year intervals that evaluates the condition and performance of the seawall, and related drainage and vegetation elements, and to submit the report with recommendations, if any, for necessary maintenance, repair, changes or modifications to the project (see special condition 11). All monitoring and maintenance commitments must be recorded as property restrictions to ensure long-term compliance, and to ensure that any future landowners are clearly notified of these commitments (see special condition 15). Finally, this approval is structured to allow future standard maintenance to the approved project to maintain it in its approved state subject to the same construction and restorations parameters of the initial development; the term of this future maintenance is indefinite until there are changed circumstances that require its

[11] Non-native invasive plants invade native habitat areas and vastly alter the ecological landscape by outcompeting and excluding native plants and animals; altering nutrient cycles, hydrology, and wildfire frequencies, and hybridizing. Rare species are particularly vulnerable to the changes brought about by non-native invaders. The most effective and efficient way to deal with weedy species is to prevent invasions. Preventing invasion is of greater conservation benefit in the long run than the far more costly and difficult efforts to control a widespread pest species.

reevaluation (see special condition 13).

Conclusion

As conditioned for final engineered plans (that can be peer-reviewed by the Commission's coastal engineer), long-term monitoring and maintenance to ensure the permitted structure remains effective and in its approved state, a prohibition on additional armoring seaward of the seawall structure, and for the Applicants to assume all risk and responsibility for development at this shoreline location, and as discussed above, the proposed project is consistent with the City's certified LCP.

1.2.6 Geologic Conditions and Hazards Conclusion

As discussed above, the facts of this particular case show that the proposed project is the least damaging feasible alternative available to protect existing structures in danger from erosion. The project has been designed and conditioned to minimize (to the extent feasible) sand supply impacts, and to require the Applicants to monitor and maintain the seawall and all its various components. Special conditions require the Applicants to submit Final Seawall Plans amending the design of the shoreline armoring device consistent with the May 20, 2003 *Bluff Restoration and Shore Protection* plans prepared by Skelly Engineering. Special Condition 1 requires said plans to be further revised and supplemented to address concerns regarding the seawall footprint, surfacing of the seawall, alignment of the storm water outfall, and drainage features. As conditioned to implement the proposed geologic hazard measures consistent with the Commission's understanding of them, the proposed project can be found consistent with the City's Bluff Hazard and Shoreline Protection Criteria and Standards (S-6 and 17.078) as discussed in this finding.

B. Public Access and Recreation

1.1 LCP and Coastal Act Policies

Coastal Act Section 30604(c) requires that every coastal development permit issued for any development between the nearest public road and the sea "shall include a specific finding that the development is in conformity with the public access and public recreation policies of [Coastal Act] Chapter 3." The proposed project is located seaward of the first through public road (Indio Drive). Coastal Act Sections 30210 through 30214 and 30220 through 30224 specifically protect public access and recreation. In particular:

> ***30210.*** *In carrying out the requirement of Section 4 of Article X of the California Constitution, maximum access, which shall be conspicuously posted, and recreational opportunities shall be provided for all the people consistent with public safety needs and the need to protect public rights, rights of private property owners, and natural resource areas from overuse.*
>
> ***30211.*** *Development shall not interfere with the public's right of access to the sea where acquired through use or legislative authorization, including, but not limited to, the use of dry sand and rocky coastal beaches to the first line of terrestrial vegetation.*

30213. *Lower cost visitor and recreational facilities shall be protected, encouraged, and, where feasible, provided. Developments providing public recreational opportunities are preferred. …*

30221. *Oceanfront land suitable for recreational use shall be protected for recreational use and development unless present and foreseeable future demand for public or commercial recreational activities that could be accommodated on the property is already adequately provided for in the area.*

30223. *Upland areas necessary to support coastal recreational uses shall be reserved for such uses, where feasible.*

Coastal Act Section 30240(b) also protects parks and recreation areas, such as the adjacent beach area. Section 30240(b) states:

30240(b). *Development in areas adjacent to environmentally sensitive habitat areas and parks and recreation areas shall be sited and designed to prevent impacts which would significantly degrade those areas, and shall be compatible with the continuance of those habitat and recreation areas.*

These overlapping policies clearly protect the beach (and access to and along it) and offshore waters for public access and recreation purposes, particularly free and low cost access.

In addition the City's certified LCP requires:

17.078.060(4)(b) *Seawalls shall not be permitted, unless the City has determined that there are no other less environmentally damaging alternatives for the protection of existing development and coastal dependent uses. If permitted seawall design must…provide for lateral beach access.*

17.078.060(6)(d) *Shoreline structures…which serve to protect existing structures… and that may alter natural shoreline processes shall not be permitted unless the City has determined that when designed and sited, the project will…provide lateral beach access; …enhance public recreational opportunities.*

The City's area-specific Land Use Plan policies require the provision of lateral beach access and require creating public viewpoints in the Sunset Palisades planning area. Policies LU-A-11 and LU-A-12 state in part:

LU-A-11 Beach Access *Lateral beach access dedication shall be required as a condition of approval of discretionary permits on ocean front parcels;*

LU-A-12 Topaz Street, Florin and Encanto Street *The Topaz Street, Florin Street and Encanto Street undeveloped accesses shall be developed as coastal viewpoints rather than as stairways. Low-lying drought tolerant prickly vegetation which will deter undesignated access paths should be planted at the top of the bluff. Park benches are recommended to encourage the*

use of these areas as viewpoints. Attractive railings should be used to protect the bluffs rather than chain link fencing.

1.2 Analysis

1.2.1 Loss of Public Access

There is a small pocket beach used mainly by neighborhood residents and occasionally by visitors seaward of the residences at 121 and 125 Indio Drive. The beach at the end of Indio Drive is known locally as the "Palisades" and the reefs offshore are used by surfers. There is also some tide-pooling in this area.

The proposed seawall has been designed so that it minimizes encroachment onto the existing pocket beach and backshore area (see special condition 1a). It will, nevertheless, be placed on portion of the backshore of the pocket beach that would eventually become beach area over time were the bluffs allowed to erode naturally. The Commission's method for calculating the long-term loss of beach due to fixing the back beach is equal to the long-term erosion rate (6"/year) multiplied by the width of the property which has been fixed by a resistant shoreline armoring device (165 feet). As estimated in the Geologic Conditions and Hazards findings above, the impact associated with fixing the back beach is estimate to be roughly 82.5 square feet per year or 4,125 square feet of the life of the project (50 years).

Similarly, section 1.4 of the geologic conditions and hazards findings addressed the impacts associated with seawall encroachment onto the backshore area of the beach. Based on the proposed footprint of the vertical seawall (18" x 165'), approximately 247.5 square feet of backshore area will be covered by the seawall footing. Using the Commission's formula, this translates into a one-time impact of 247.5 cubic yards of sand. This represents the amount of backshore area beneath the seawall that will no longer contribute to the local sand supply or be used for public access and recreation.

As a result, the proposed project would result in an incremental reduction in useable backshore area seaward of the residences at 121 and 125 Indio. This will be offset somewhat by the Applicant's proposal to remove the storm water outfall pipe and concrete pedestal, which will remove approximately 48 square feet of beach coverage. In addition, the Applicant is proposing to remove and replace the City's failed storm water filtering system with the appropriate water quality BMP, which will help to protect and enhance water oriented recreational opportunities. Applicants estimate the cost of removing and replacing the stormwater system at $35,000. The Applicants have agreed to maintain the energy dissipating rocks at the portal of the outfall but not the storm water system itself. The storm water system is located on City land at the end of Florin Street and is a public works facility that serves the public at large and not just the residences at 121 and 125 Indio Drive. The removal and replacement of the system was authorized by the City of Pismo Beach and therefore needs to be maintained and monitored by the City (see special condition 14).

Notwithstanding these mitigation measures, the project remains inconsistent with the LCP coastal access policies for the following reasons: (a) seawall development in an area dedicated for public access; and (b) net loss of 4,324.5 square feet of backshore beach and sand over the 50 year life of the project.

As a condition of approval for construction of the residence at 125 Indio, the previous owner (Gary Grossman) was required to submit a lateral access easement extending from the top of the bluff to the mean high tide. An offer to dedicate (OTD) public access easement was recorded in the San Luis Obispo County office on December 8, 1997. See Exhibit 5. Among other things, the OTD was irrevocably offered to the people of California and is binding on the owner, heirs, assigns, and successors in interest, for a period of 21 years. The OTD stipulates that the offer shall not be used or construed to allow anyone, prior to acceptance of the offer, to interfere with any rights of public access acquired through use, which may exist on the property. Further, the OTD instructs that the grantor shall not interfere with the public's use of the easement nor take any action inconsistent with such use, including constructing or improving the property in a manner inconsistent with the public's use or enjoyment thereof. The City, as the grantor and holder of the OTD, approved a project that would result in development of the lateral access area inconsistent with the terms and use prescribed by the offer.

Similarly, the area of the bluff seaward of 121 and 125 Indio is clouded by a San Luis Obispo County easement. As a condition of the original subdivision of the Sunset Palisades planning area, the County of San Luis Obispo required lateral access from the toe of the bluff to the mean high tide. See Exhibit 6. This occurred prior to the area's annexation into the City of Pismo Beach and ownership of the easement(s) may or may not have transferred along with the landward property to the City. At the time of the writing of this report, staff was unable to confirm the status of the easement such as ownership, exact location and terms, etc. Thus, as proposed, the project may be inconsistent with the terms of the easement and encroach into an area that has been dedicated for lateral public access and passive recreational use. Secondly, if the property was granted in fee to the County of San Luis Obispo, the Applicants may not have legal interest or the appropriate permission to construct a seawall on the underlying land upon which the proposed seawall would be founded.

To resolve these issues, staff is recommending special condition 9 requiring the Applicants to obtain evidence that the City of Pismo Beach CDP and the associated OTD recorded over the property at 125 Indio Drive (APN 010-205-001) has been amended in a manner that authorizes the approved development in the area that was previously required by the City to be dedicated for public lateral access and passive recreation purposes. Additionally, the Applicants are required to provide evidence of legal interest to undertake the development along the toe of the bluff, seaward of the residences at 121 and 125 Indio Drive (APNs 010-205-001 and 010-205-002).

Moreover, to mitigate for the recreational access loss, the area seaward of the seawall can be dedicated directly to the appropriate entity (i.e., the City of Pismo Beach) or the Applicant can record an offer to dedicate this area. In this case, the Applicant owns in fee-title a rectangular area of beach, seaward of the proposed seawall location (see Exhibit 7). Although the value of such a dedication (in a public beach access sense) is limited because the area held in fee title by the Applicants is already a de facto part of the existing public beach access area, and it cannot be distinguished from the surrounding beach areas, deeding fee title helps in perfecting a public fee-title legal ownership of the beach area in question. Therefore, this approval is conditioned for a dedication, either outright or an offer, to an appropriate management entity of the rectangular beach area that would be seaward of the seawall to the mean high tide. (see Exhibit 7 and special condition 10)

In addition, because the proposed development directly impacts public access and recreation for which there is, thus far, limited proposed mitigation, additional public access mitigation is required. Adding together the public access impacts associated with encroachment of the structure on the backshore (247.5 cubic yards) and fixing the back beach (4,125 cubic yards), there is an estimated impact equal to 4372.5 cubic yards of sand. Subtracting from this amount, 48 cubic yards of beach gained from the removal of the storm drain pedestal, and the total quantifiable impact equals 4,324.5 cubic yards of sand. Based on the cost estimates to supply sand to this location under the Commission's standard methodology -- $26 per cubic yard of clean, delivered beach sand-- the total mitigation fee would be $112,437. This figure represents the total quantifiable impacts associated with beach encroachment and the area lost to "fixing" the location of the back beach. However, while there are quantifiable impacts to the beach resources due to this project, namely, the loss of beach area in front of the proposed wall over time, there is no direct and feasible mechanism for mitigating this loss. That is, similar to the difficulties in mitigating the sand supply lost to the larger system (see above), there are no proven methods for supplying sand to the beach in this location that would maintain the beach. Mitigation reasonably related and proportional to the project impacts does need to be provided, though, which can be accomplished by acknowledging the partial mitigation already provided by the applicant (storm drain system improvements equivalent to approximately $35,000 and concrete block removal (approx. $2500)), as well as by requiring that the applicant contribute a reasonable in-lieu fee to the beach access improvements of the overlook immediately adjacent to the project site. Although this does not fully mitigate for the eventual real loss of the beach fronting the proposed seawall, it does provide some public access mitigation. Based on the Commission's experience, a fee not to exceed $10,000, to the City of Pismo Beach or the Coastal Conservancy, for the purpose of improving an overlook at the adjacent Florin Street cul-de-sac, is at least reasonable mitigation in conjunction with the already included mitigations.

1.2.2 Construction Impacts

During construction, lateral beach access and public viewing of the coastline would effectively be precluded on the beach seaward of the residences and at the Florin Street cul-de-sac. Construction activities would intrude and negatively impact the aesthetics, ambiance, serenity, and safety of the beach and immediate offshore recreational beach experience. The public would bear the burden of the negative construction impacts associated with roughly 2 to 3 weeks of construction estimated by the Applicants. Although this impact could be minimized by appropriate construction controls (such as limiting the width of construction corridors, limiting the times when work can take place, fencing the minimum construction area necessary, keeping equipment out of high use areas, storing equipment off of the beach at night, and clearly delineating and avoiding to the maximum extent feasible public use areas, etc., see required construction plan – special condition 2), it cannot be eliminated. The project construction will also negatively impact the beach recreational experience by introducing construction including large equipment, noise, etc., into what is a fairly tranquil natural area. This temporary impact, thus cannot be fully mitigated, however, the Applicants will be required to restore all beach areas and beach access points following construction (see special condition 6).

There are also indirect public access impacts associated with water quality issues. As noted, one component of the proposed project is the removal and replacement of the City's failed storm water outfall that currently extends out onto the "pocket" beach seaward of the Florin Street end. Currently, storm water is discharged through the outfall directly onto the beach and into the ocean without treatment. Pollutants commonly found in runoff from developed neighborhoods might include petroleum hydrocarbons such as oil and grease from vehicles, heavy metals, paint and household cleaners, soap and dirt from washing vehicles, litter and organic material, fertilizers, herbicides, and pesticides, animal waste, and bacteria and pathogens from wastewater discharges. This entrainment has the potential to adversely effect those persons (and marine habitat) on the beach and in the water directly adjacent to storm water outfalls such as the unit at the Florin Street end. Beachcombers and residents of the Palisades neighborhood use the beach area directly in front of the outfall. There is heavy use of the surfing resources in the south Palisades area within close proximity of the subject site. Directly seaward of Florin Street outfall are rocky reefs and coves that provide habitat for a variety of marine organisms. The Applicants propose to replace the existing storm drain system with the appropriately designed and sized storm water filtration system, though they have not specified the technical aspects of the system.

In instances where structural BMPs are appropriate to adequately filter urban pollutants, the Commission has required these systems to be designed to remove vehicular contaminants and other typical urban pollutants more effectively than a standard silt and grease trap as well as treat the amount of storm water runoff expected to enter the storm drain inlet during the 85th percentile, 1-hour storm event with a safety factor of 2 or greater. It is not clear from the submitted materials that the Applicants are proposing to incorporate this type of BMP into the storm water drain at this location, and thus special condition 1c is necessary to ensure that the appropriate technology is incorporated to maximize water quality benefits and enhance access and recreation at this location.

1.3 Public access and recreation conclusion

The proposed project would result in the loss of an area used and dedicated for public access, and therefore it is inconsistent with the public access and recreation provisions of the LCP and the Coastal Act. However, based on the access mitigation required by the recommended special conditions, the project's public access impacts have been proportionately mitigated in this case. Therefore, and as conditioned to implement the proposed public access mitigation measures consistent with the LCP and the public access and recreation policies of the Coastal Act, the proposed project can be found consistent with the certified LCP and Coastal Act access and recreation policies discussed in this finding.

C. Scenic Resources

The City's certified LCP policies detail specific public viewshed protections. Policy S-6 states in part:

> **S-6 Shoreline Protective Devices** *Shoreline protective devices, such as seawalls, revetments, groins, breakwaters, and riprap shall be permitted only when necessary to protect existing principal structures, coastal dependent uses, and public beaches in danger of erosion. Design and construction of protection devices shall minimize alteration of natural landforms, and shall*

be constructed to minimize visual impacts.

Zoning standard 17.078.060(4) mirrors policy S-6 and states in part:

> **17.078.060(4)** *Seawalls shall not be permitted, unless the City has determined that there are no other less environmentally damaging alternatives for the protection of existing development and coastal dependent uses. If permitted seawall design must…***(a)** *respect natural landforms; and* ***(c)*** *use visually compatible colors and materials…*

Partly because of its geographic setting between Point Buchon and the Point Sal and partly because of its relatively unspoiled central California beach-town setting, the project area is located in a significant public viewshed. The City's certified Land Use Plan designates the Florin Street end cul-de-sac as a public viewpoint of importance.

In terms of permanent public viewshed impacts, the proposed vertical seawall will cover and alter a natural, undulating, coastal landform. This landform includes an actively eroding coastal bluff, prominent bedrock benches, and forming seacave. Much of the localized area has already been altered by shoreline armoring, and this project will bridge existing armoring on either side of Florin Street. As a result, the proposed seawall will negatively impact the public viewshed. The Applicants propose to offset the impacts from the proposed vertical seawall by colorizing the wall to match the natural bluff and by contouring, texturizing, and sculpting the face of the vertical wall to mimic the natural landform. In addition, the Applicants propose to replant the upper bluff area with drought-tolerant, native, non-invasive vegetation to stabilize the upper bluff and reconstructed upper bluff area. The Applicants further agree to monitor, report and provide long-term maintenance of the seawall, shotcrete, return walls, and the energy dissipating rock at the Florin Street storm water outfall. Monitoring and reporting of the performance of the seawall will be performed by a qualified expert over the life of the structure (i.e, 50 years) either (1) annually on the anniversary of the date of issuance of the permit for the project, or (2) after each 2-year occurrence storm or wave event, or after a seismic event within 50 miles with a Ritcher scale magnitude of 4 or greater, whichever comes first. See special conditions 1b and 5.

In addition to permanent impacts, there are also the temporary visual impacts during the 2 – 3 week construction window. Scenic resources and viewshed would be degraded until such time as the construction was to cease. The Applicants propose to limit the construction impacts by implementing a 5-day work week (Monday – Friday), thus keeping open the public vista point on weekends and holidays during the construction period. In terms of compensatory mitigation, the Applicant has agreed to restore planting in the area of the reconstructed bluff seaward of the residences and the Florin Street end with native vegetation. Separate from the bluff stabilization benefits of the restoration, the restoration area will enhance the public viewshed above what exists today.

As conditioned to implement these proposed visual mitigations consistent with the Commission's understanding of them, the project as proposed is consistent with policy S-6 and zoning standard 17.078.060(4) of the City's certified LCP.

D. California Environmental Quality Act (CEQA)

Section 13096 of the California Code of Regulations requires that a specific finding be made in conjunction with coastal development permit applications showing the application to be consistent with any applicable requirements of CEQA. Section 21080.5(d)(2)(A) of CEQA prohibits a proposed development from being approved if there are feasible alternatives or feasible mitigation measures available which would substantially lessen any significant adverse effect which the activity may have on the environment.

The Coastal Commission's review and analysis of land use proposals has been certified by the Secretary of Resources as being the functional equivalent of environmental review under CEQA. This staff report has analyzed the environmental impacts posed by the project and identified changes to the project that are necessary to reduce such impact to an insignificant level. Based on these findings, which are incorporated by reference as if set forth herein in full, the Commission finds that only as modified and conditioned by this permit will the proposed project avoid significant adverse effects on the environment within the meaning of CEQA.